

THE PSYCHIATRIC QUARTERLY

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DEPARTMENT OF MENTAL HYGIENE

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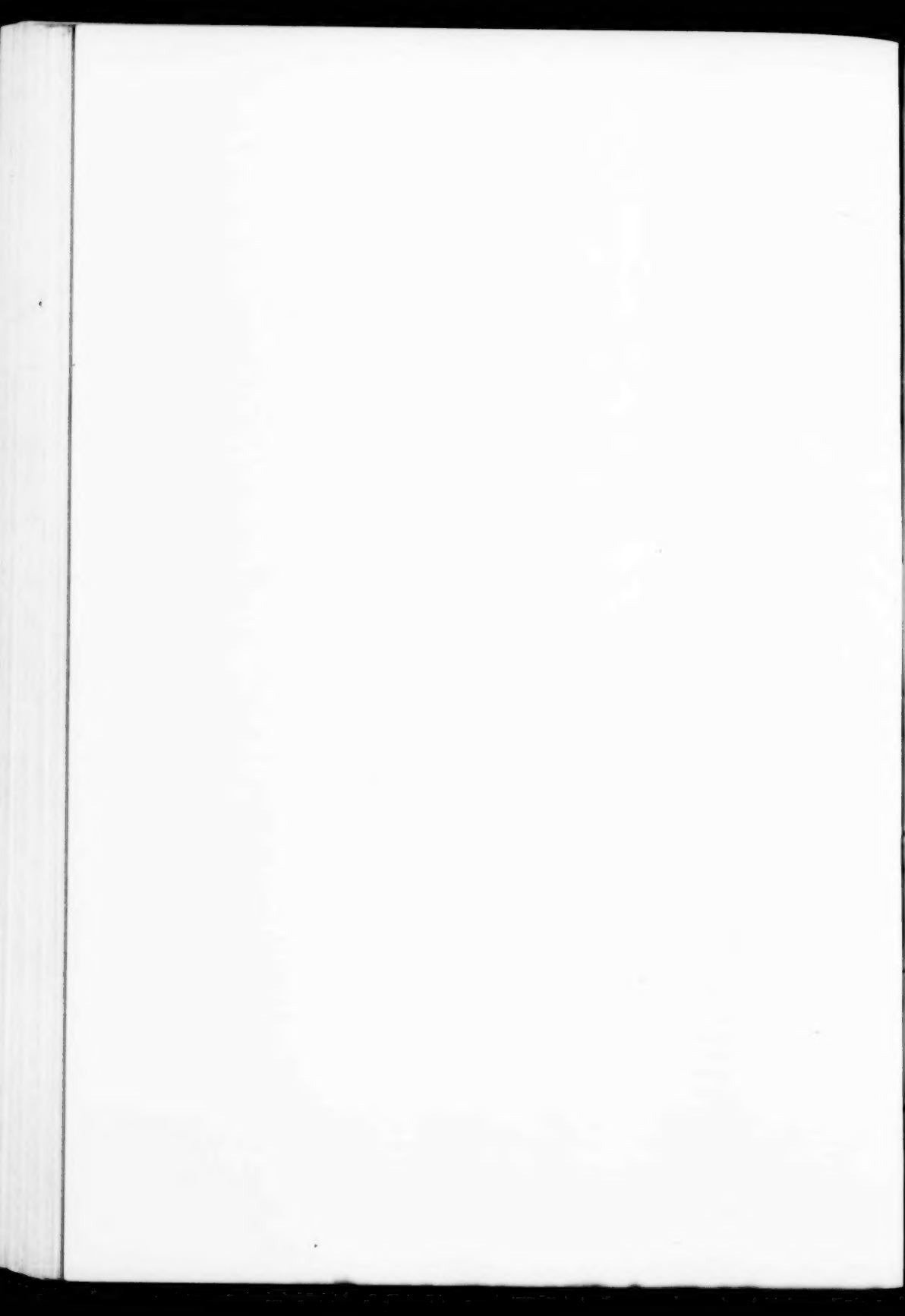
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*Two of the associate editors, Duncan Whitehead, M. D., and James N. Palmer, M. D., are on temporary inactive status, as they are absent in military service.



THE PHYSIOLOGY OF THE "SHOCK" THERAPIES*

BY HAROLD E. HIMWICH, M. D.

The discussion of the physiology of the "shock" treatments to be presented here has been limited at the request of Commissioner Frederick MacCurdy, M. D., of the New York State Department of Mental Hygiene to remarks which it was possible to deliver within one-half hour at a Quarterly Conference of the Department. In a way, this is a difficult task because all the "shock" therapies are essentially physiologic in principle, and therefore, any discussion of their physiology should be inclusive. These therapies are essentially physiologic because they change the internal environment of the body, the *milieu interieur* of Claude Bernard, and the physician sees in his patients the effects of these changes in their internal environment. The changes are expressed in terms of brain wave patterns,^{1,2} in alterations of conditioned reflexes,^{3,4} in appearance of neurological symptoms⁵ and finally, and most important to the psychiatrist, in behavior—the amelioration which may follow the treatment.

A study of some of the changes wrought by the insulin hypoglycemic treatment of schizophrenia reveals that the internal environment of the body, and therefore of the brain, also undergoes the following alterations: increases in cholesterol and serum protein and diminutions in phosphorus, potassium, amino acids, and glucose.^{6,7} It has not yet been possible to evaluate the significance of all these changes on the brain, but the effects of removal of glucose from the blood stream are known.

Why is cerebral function altered in hypoglycemia? The reason for the peculiar sensitivity of the brain to lack of blood sugar lies in the fact that it is the only organ which obtains its energy from the combustion of carbohydrate alone.⁸ The liver, the kidneys, the heart and voluntary muscle, for example, may oxidize either fat or carbohydrate. When the carbohydrate supply in the blood is decreased the various nonnervous organs continue to maintain their activities at the expense of the energy obtained by the oxidation of fat. The brain, however, when deprived of carbohydrate can resort

*Read at the quarterly conference of the New York State Department of Mental Hygiene, Albany, May 19, 1944.

to no alternate foodstuff. Its metabolism must slow down, and cerebral functions suffer. Studies of cerebral metabolism made before,⁹ during and after profound hypoglycemia reveal that the brain metabolism may be depressed to one-quarter of its normal rate during the treatment. See Table 1.

TABLE 1. BRAIN METABOLISM IN INSULIN HYPOLYCEMIA

Patient No.	Arteriovenous oxygen difference volume, per cent	Brain metabolism per cent
1	6.2	100
	3.7	60
	2.1	34
	1.3	22
2	6.6	100
	1.7	26
	6.6	101

Table 1 shows the difference in the oxygen content of the blood entering and leaving the brain during hypoglycemic insulin treatment of patients with schizophrenia as well as the changes of brain metabolism taking the preinsulin value as 100 per cent. The cerebral arteriovenous oxygen difference is observed to fall during the treatment. In the second observation, it is restored when glucose is administered. In addition to cerebral arteriovenous oxygen difference, changes in blood flow must be taken into consideration in determining brain metabolism; and when this is done, one finds that in the first observation brain metabolism decreased to 22 per cent of the preinsulin value and in the second patient to 26 per cent of the preinsulin value.

But not all parts of the brain are equally susceptible to hypoglycemia. The reason for this differential susceptibility becomes apparent when the metabolic rates of the various parts of the brain are determined in the Warburg respirometer. The oxygen intake is not found to be the same throughout the brain.¹⁰ The differences between the various regions do not occur in a haphazard fashion, but, in general, a decrease is observed as the neuraxis is descended. Such a sequence of decreasing metabolic rates indicates that the newest phyletic layers,¹¹ including the cerebral hemispheres, would be the first to suffer from deprivation of energy, while the lowest, the medulla oblongata, would be the last. The symptoms of hypoglycemia might, therefore, be expected to occur in the same sequence and to be allocated to the different parts of the brain as they are enveloped in turn by the metabolic depression. It must be re-

membered that many of the symptoms are transient and some last but a short time. Moreover, not all of those to be described appear in any one hypoglycemic episode. Nevertheless, by observing the time relationships between the symptoms, von Angyal¹² and—especially—Frostig¹³ were able to show that they arrange themselves in symptom complexes. If the patient receives a dose of insulin adequate to bring on coma, the symptoms appear in groups which—as a working hypothesis—may be said to be linked with the functional patterns of different levels in the neuraxis. The writer's guide in this task of describing the symptoms has been Hughlings Jackson's theory¹⁴ of the phyletic organization of the central nervous system, according to which the newer phyletic and higher anatomic portions of the brain regulate and control the older and lower portions.

SYMPTOMS OF HYPOGLYCEMIA

The symptoms are divided into five groups. The first is referable to depression of the cerebral hemispheres and part of the cerebellum, the highest layer in the brain. The second group is associated with the release of the activities of the subcortico-diencephalic layer. The third constellation of symptoms represents the liberation of the midbrain. The fourth frees functions regulated by the upper part of the medulla oblongata. The fifth is due to release of the lower portion of the medulla oblongata and its vital centers, respiratory, cardiac and vascular. The fifth stage is the sign of approaching danger, a fact which must be appreciated by the physician administering this treatment. A diagrammatic presentation of these five layers is seen in Figure 1.

A. *Cortical phase.** After the injection of insulin, there is a latent period of about one-half hour before the first group of symptoms becomes evident. As the cortex is depressed by the hypoglycemia, the dominant pattern of human nervous activity loses its hold, and the fine balance between sensory stimulation and motor

*The following description of the symptoms is taken from a forthcoming book by the present writer on "Brain Metabolism and Its Application to Cerebral Disorders."

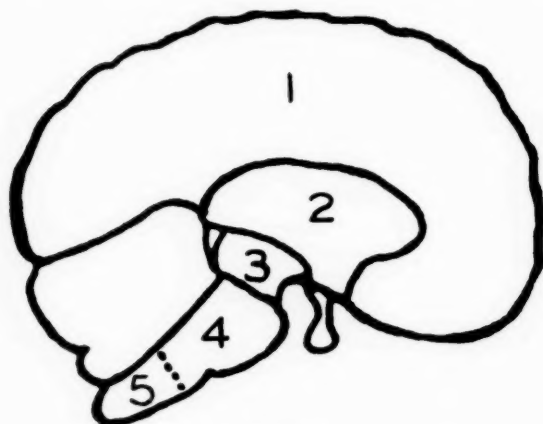


Figure 1
The physiology of shock therapy

response in muscle and organs begins to break down. The first sign of this dissociation is an overactivity in the parasympathetic branch, manifested by watery sweat, salivation and a slow heart rate, observed if the patient happens to go off quietly to sleep. More frequently, however, and especially if the patient is restless, or is stimulated by some act or movement of the attendants, the sympathetic signs of thick viscid perspiration and salivation assume prominence. Muscular changes take the form of muscular relaxation, hypotonia and tremors, all symptoms of joint cortical and cerebellar origin.¹⁵ Visual disturbances develop, speech is slow, and the execution of voluntary muscular activity becomes more and more imperfect. All of this is accompanied by a gradual clouding of consciousness. The patient's orientation as to time and place (in which he lives) becomes poor. He is inattentive, his speech is incoherent, and his understanding of what is going on around him defective. Both perception and thinking grow difficult, as exemplified in the vague and incoherent response to simple questions. These signs gradually become more marked as somnolence deepens, and are finally succeeded by complete loss of contact with the surroundings. Sometimes a state of wild excitement marks the end of the first stage.

B. *Subcortico-diencephalic phase.* Loss of contact may be regarded as the onset of coma and the beginning of the second group of symptoms, which may be localized in the subcortico-diencephalic portion of the brain. On watching the patient in the second phase, one notices that the integration of the cortical level has broken down completely, and in its place an entirely different interaction of the sensory, motor and visceral phenomena is found. Sensations become less discriminative, but more intense, and the motor reactions they evoke are correspondingly changed: Reflex activity is more generalized and less adapted to the specific stimulus, while the visceral component of this uncontrolled motor behavior reaches its height in maximal sympathetic function.

Briefly reviewing this layer anatomically, one finds that it is comprised of the sensory thalamus, the visceral hypothalamus, and the motor striatum. This is not to imply that each of these functions is allocated to a single cerebral area, and none other. Though the thalamus is closely associated with sensations, the hypothalamus also receives afferent impulses, though these probably do not attain awareness. In a like manner, visceral reflexes are resident not only in the hypothalamus, but also in the thalamus and striatum.¹⁶ And motor patterns are mediated by other subcortical nuclear masses as well as the striate body. But, for simplicity in the following presentation, these various components of neural activity in the second layer will be referred to their most important center.

When the subcortical motor nuclei are freed from cortical influence, stereotyped movements become apparent. These are primitive movements such as involuntary grasping and sucking, both of which may be spontaneous or may be elicited by placing an object either in the hand or between the lips of the patient. Other primitive movements which may appear at this time are protrusion of the tongue, kissing, snarling and grimacing. During this time, the patient exhibits aimless motions known as "motor restlessness." Fine myoclonic twitches of the small muscles are observed and if they become generalized and more vigorous—lightning-like in character—and seize the large muscles of the neck, shoulder and hip girdles, they assume a clonic form and may be the precursors of a fit. Rarely are these convulsions seen in hypoglycemia, but if they do appear, it is almost always in the second phase.

Any response to stimulation of the body throughout this period is like that to a painful protopathic stimulus, since the fine discriminatory capacity of the cortex is lost in the second phase. Any irritation whatsoever evokes an abnormally large reaction whether in terms of brain waves¹⁷ or muscular contractions. The release of the sensory thalamus from higher control is responsible for this hypersensitivity. For example, the normal response on stimulating the sole of the foot from the heel to the toe is flexion of all five toes and moderate retraction of the foreleg. A patient in the second stage of hypoglycemia has lost his ability to localize a stimulation, and so he responds by withdrawing his whole leg and moving his body agitatedly as if in extreme pain.*

The release of the hypothalamus brings about signs of preponderance in the sympathetic nervous system, expressed periodically in waves of activity as the heart rate accelerates, the pupils dilate and exophthalmos is observed, the eyeballs bulging from their sockets. The face is flushed and the body is drenched in viscid perspiration. The pupils still react to light. When these motor, sensory and autonomic symptoms begin to disappear, it is a fairly accurate sign that the patient is entering the third phase of his episode.

Though convulsions are comparatively rare in the course of hypoglycemia and seldom are fatal, still they are sufficiently dramatic to warrant further description. They may be evoked by stimulating the patient who is hyperirritable at this time, but usually they are spontaneous. As was said, they almost always occur in the second phase, and in that portion of the phase when the release of the medial thalamic nucleus, an end-station for protopathic sensitivity, and of the hypothalamus, responsible for sympathetic hyperactivity, attains a climax. The actual convulsions may be preceded by conjugate deviation of the eyes and myoclonic twitchings as the subcortical nuclei are liberated. The twitchings then are intensified and become more generalized, finally spreading throughout the body musculature in clonic spasms to complete the convulsive hypermotility. The latter lasts but a minute or two. Completely exhausted by the fit, the patient lies prostrate, with an ashen pallor,

*The normal response, flexion of the five toes (Refs. 18, 19) depends on the integrity of the cortico-spinal tracts, starting from the cerebral cortex down to their endings in the motor nuclei of the spinal cord. A break in these paths results in extension of the great toe and fanning of the other four toes—the sign of Babinski.

a thready pulse, and shallow breathing. The patient's coma is, as a rule, lightened after one of these convulsive fits and before he can again relapse into deeper coma, the physician terminates the treatment by glucose, obviating any chance of a second convulsion. The great majority of patients are never seized by one of these fits, but instead pass directly to the third phase.

C. *Mesencephalic phase.* After the activities of the second "layer" have been completely suppressed, the third, or mesencephalic, layer is left in uninhibited control over the remaining active portions of the central nervous system. The primitive movements distinctive of the second phase cease, the patient is less responsive to external stimuli, but more so to those arising within the body itself. Signs of parasympathetic activity reappear as pupils contract and pulse slows down. This parasympathetic reign is repeatedly overcome, usually in response to stimulation of any kind when for short periods the patient exhibits the strenuous spasms which are pathognomonic of the mesencephalic phase. During each spasm, the integration of the somatic (skeletal muscle) and visceral activities of the third layer is seen by an accelerated heart rate, raised blood pressure and dilatation of the pupils accompanied by failure to react to light at each dilatation. The spasms are built upon a growing hypertonia and are of two types: tonic and torsion. In the tonic spasms, agonistic and antagonistic muscles contract simultaneously, so that the limbs and trunk are held taut. This increased tonus is displayed in a postural distribution throughout the body, that is, in the upper extremities the flexors are dominant over the extensors so that the arms are partially crooked at the elbow, and in the remainder of the body the extensors are prepotent causing the trunk to be arched and the legs rigidly extended. The other motor symptom is the torsion spasm, wherein the body rotates along its own long axis as the shoulders and trunk twist on the pelvis and legs.

Sometimes toward the end of this phase, the eyes no longer act in an associated manner but reveal movements independent of each other, a symptom explained by the fact that the midbrain houses the nuclei of the third and fourth nerves, which, together with the sixth nerve, control ocular movements. As the functions of the medial longitudinal bundle, connecting these nuclei, and the layers

above the midbrain are struck out of operation, the unregulated activities of the extraocular movements are observed. An important sign of the inhibition which is lost as the upper portions of the brain are depressed is the Babinski, most easily but not exclusively elicited in the mesencephalic phase.

D. *Premyelencephalic phase.* One becomes aware that the premyelencephalic phase is approaching when the tonic spasms of the third phase give way to extensor spasms. In this type of spasm, the back and lower extremities are arched as in the tonic, but the difference is in the position of the arms. Instead of being flexed, as they were in the mesencephalic period, they gradually work themselves upward and backward until all four extremities are extended at full length. Like many spasms, these are recurrent, and each one lasts but a short interval, at which time the visceral accompaniments of motor activity are seen. The pupils dilate and do not react to light, and the pulse rate increases, as the sympathetic system temporarily overcomes the parasympathetic. During the transition in postural tone from the tonic pattern to the extensor, the reflexes of Magnus and DeKleyn²⁰ may be elicited in this way: Rotation of the head, whether spontaneous or passive, is accompanied by extensor spasms of the extremities on the side toward which the chin points, and flexor spasms of both extremities on the side toward which the back of the head turns, a fundamental figure and one often seen in interpretive dancing. In many ways, this whole fourth phase resembles the picture of decerebrate rigidity which Sherrington²¹ studied on a brain sectioned through the mesencephalon below the red nuclei but above the vestibular nuclei. All of these symptoms may therefore be allocated to the rostral portion of the medulla oblongata, hence, the term premyelencephalic. This stage, while not dangerous in itself, gives warning of the succeeding and perilous myelencephalic phase; and, if the physician is inexperienced, it is advisable to terminate the coma at this point.

E. *Myelencephalic phase.* The fifth stage, or myelencephalic, is risky and constitutes the most dangerous point in the coma. It should not be allowed to continue more than 15 minutes or so; in fact, the instant it is recognized, glucose could be administered. This phase is marked by a predominance of parasympathetic

signs; the patient's respiration is shallow, his heart rate slow, his skin pale and bloodless, and the pupils are pinpoint, no longer reacting to light. Perspiration takes on a watery consistency and the body temperature, which has been falling constantly after the end of the first phase, now reaches its lowest point.²² The patient's muscles are relaxed in extreme hypotonia, tendon jerks are depressed, and the corneal reflex is lost entirely. One gets the impression that all the life processes are slowed down to a minimum, but in truth it is actually the brain which is suffering most. Indeed, any further cerebral depression would not be compatible with a complete recovery (See Table 2 and Figure 1).

Recovery. Recovery from insulin coma follows as definite a plan as its development, but the symptoms occur in the reverse order. If glucose is administered at any time up to and including the first 15 minutes of the fifth phase, the patient retraverses the hypoglycemic path, a process requiring only a few minutes for complete restoration. Once glucose is again available to support cerebral metabolism, the various phyletic layers are brought back into function, one by one, this time in a rostral direction. The vagotonic symptoms of the fifth phase immediately disappear. The extensor spasms of the fourth phase may last for a brief moment before the tonic spasms of the third phase are substituted in their place. The "motor restlessness" of the second stage follows directly, and the clouded consciousness of the patient gradually clears as he regains contact with his environment.

The rate of awakening depends upon the method of administering the carbohydrate. When glucose is given by stomach tube, the awakening is slow since a 10 to 30-minute period is required for absorption. But if glucose is given intravenously, the patient arouses quickly, often while receiving the injection. A second factor influencing the rate of recovery is the depth and duration of the depression at the time the hypoglycemia is terminated. The later the termination, the greater the number of stages to be retraversed. For example, when sugar is given, deep in the second stage, primitive movements persist for a little while, and the patient may be drowsy and disoriented (symptoms of the first stage) before he returns to his habitual state. If termination takes place during the deep coma at the end of the fifth stage, the patient must

TABLE 2. TABLE OF HYPOGLYCEMIC SYMPTOMS

Group	Symptoms	Localization
First	Perspiration	Depression of activities of cerebral hemispheres and cerebellum
	Salivation	
	Muscular relaxation (hypotonia)	
	Fine tremor	
	Somnolence	
	Clouded consciousness	
	Excitement	
Second	Loss of environmental contact	Release of subcortico-diencephalon
	Motor phenomena	
	Primitive movements	1. Subcortical motor nuclei
	Forced grasping	
	Myoclonic twitchings	
	Clonic spasms	
	Motor restlessness	2. Thalamus
	Sensory changes	
	Increased sensitivity to stimulation	3. Hypothalamus
	Changes in the autonomic nervous system	
	Increased sympathetic activity	
	Periodic exophthalmos	
	Dilatation of pupils (they still react to light)	
	Fast heart	
	Perspiration	
	Salivation	
	Flushing of the face	
Third	Diminished sensitivity	Release of midbrain
	Tonic spasms	
	Torsion spasms	
	Independent movements of the eyes	
	Babinski reflex	
Fourth	Extensor spasms	Release of medulla
Fifth	Increased parasympathetic activity	1. Upper
	Pin-point pupils	2. Lower
	No light reaction	
	Slow heart rate	
	Pallor	
	Depressed respiration	
	Muscular flaccidity	
	Depressed reflexes	
	Loss of corneal reflex	

retrace every step of the hypoglycemic road which he had previously passed over during the shock.*

Protracted shock. If the medullary symptoms are unheeded and the depression is allowed to endure too long in the fifth phase, so that the tendon jerks are depressed and corneal reflexes disappear, recovery is delayed and perhaps may be incomplete, or even entirely impossible—depending upon the duration of this dangerous period. The delayed administration of carbohydrate may result in a recovery, which instead of taking place in a few minutes, may require hours or even days, and this is commonly called a protracted shock.²³ Irrespective of the duration of this sequela, the path of symptoms to recovery is always the same, and is just as constant as when the patient is falling into the coma, but in the opposite direction.

The symptoms of the patient in protracted shock denote depression of the formerly hyperactive medullary centers, and this despite the administration of carbohydrate. He continues to lie motionless but his slow pulse becomes fast and irregular; his pinpoint pupils dilated, failing to react to light; and his shallow respiration being further depressed and Cheyne-Stokes in type. Then the extensor spasms return and are even more violent than in their original appearance during the fourth phase; but the previously observed integration between the somatic and autonomic divisions of the central nervous system fails. This failure is demonstrated by comparing the autonomic accompaniments of the motor symptoms of protracted shock with those of the fourth phase. Instead of a pulse rate and blood pressure which grow faster and stronger with each extensor spasm only to return to lower levels between times, the pulse rate and blood pressure gradually fail as the violent muscular effort continues but both regain some strength after the spasm is over. If the lack of coordination between the somatic and autonomic divisions results from depression of the medullary visceral centers, then we may ascribe the fast heart rate and di-

*The word "shock" is not used here in the sense of medical or surgical shock connoting collapse with fall of blood pressure and rapid heart rate, but rather with the meaning applied by Sakel who employs this term to describe profound hypoglycemia. This use has been subsequently extended to the convulsive therapies: the use of metrazol and electric shock for mental disorders.

lated pupils of protracted shock to impulses emanating from the inframedullary sympathetic centers in the cord and passing to the pupils and the heart through the sympathetic cervical ganglia. The color of the patient, who becomes intensely cyanotic as his respiration is impeded by each paroxysm, turns ashen-gray between spasms when he lies completely exhausted, with shallow respiration and thready pulse. Most patients recover activity of the medullary autonomic centers and are able to withstand the extensor spasms to enter the third phase of tonic and torsion spasms.

After the patient passes through this phase successfully, the tonic and torsion spasms disappear, and they are eventually replaced by the hypermotility of the second phase. Localized myoclonic contractions appear, and various forms of primitive movements (forced grasping and sucking) may persist for many hours or even days. The patient tosses and thrashes around the bed, heedlessly throwing the arms and legs in a violent fashion. Arriving at the first stage, he sometimes has outbursts of wild excitement as if he were enraged, a sign which occurs at the borderline between absolute loss of contact and the clouded consciousness which finally leads to recovery. He may exist for some time in this disoriented haze, not quite able to execute a purposeful movement. The attending physician offers an object, but the patient cannot marshal his coordination to grasp it. Or, his perception may be dulled; he has not the faculty to interpret correctly what he hears and sees. When he has fully recovered, questioning reveals that he has complete amnesia for the entire episode.

Rarely is recovery so incomplete that neurologic symptoms take root and persist for a number of days. These may range from a facial palsy to a paralysis of large muscle groups, or impairment of any sensation governed by centers in the cerebral hemisphere.²⁴ If the destruction of the brain is widespread, death will ensue despite any treatment. Such an outcome, fortunately, can be avoided through care and attention to the course of the coma.

Mechanism. The symptoms of hypoglycemia from whatever cause bring to bear additional strength for the phyletic conception of the central nervous system proposed by Hughlings Jackson. Using Jackson's terminology, we have witnessed the "dissolution" of the brain under the dissecting scalpel of hypoglycemia, and at

the termination of these treatments have seen a resynthesis of this neural breakdown, in truth, a recapitulation of the "evolution" of the nervous system. It would seem that the anatomical construction and functional organization of the brain arise in an embryological process consisting of five stages of accretions, each built upon its predecessor, and each exercising characteristic functions. The integrative action of the brain depends upon an ordered cooperation of these five layers. When this harmonious interplay is dissolved for want of cerebral energy, the release of the activities inherent in any given layer reveals the loss of the inhibitory influence emanating from the layer immediately above it. It is this inhibitory capacity which permits the exercise of fine discrimination in the higher layers. And when energy is again restored because blood sugar is raised, one again sees this phyletic organization in operation, this time in the opposite direction, as the brain regains its coordination and each lower section is again subjected to the inhibitory and reinforcing powers of its superior. It is this reinforcing quality which facilitates expression from a more or less primitive structure, when such an expression is useful to the organism. Topmost in this nervous scale, and over all other members, are the cerebral hemispheres, exercising the highest discrimination and regulating the motor activity of all sections beneath.

The writer still has time to review some of the physiologic effects of other "shock" therapies namely electric shock and metrazol injection. In electric shock,^{25, 26} increased concentrations of cholesterol, phospholipids, serum protein, inorganic phosphate and blood sugar are observed. Changes in brain waves are also noted. These last for a longer time than the biochemic alterations but are also not permanent.^{27, 28, 29} Controversy exists as to whether or not morphologic changes are found in the brain after electric shock. On the whole it would appear that if they do occur they are slight.^{30, 31, 32}

Metrazol, in general, produces similar effects—as observed from biochemic, electroencephalographic, and histologic analyses—as those found in electric shock. Analysis of blood reveals raised levels of blood sugar, inorganic phosphate and serum solids.^{33, 34} Brain wave changes are developed and may require a longer time for restoration to normal³⁵ than in electric shock. Some evidence of minor changes in the brain structure is available.³⁶

The differences in the symptoms of the convulsant therapies and the fit sometimes occurring during hypoglycemia are striking chiefly because the motor phenomena are better developed and more severe in the convulsant therapies, yet the depression after the motor activities are over is deeper in insulin hypoglycemia. It would seem that the fit of hypoglycemia is a release phenomenon, while that from convulsant therapies is due to direct stimulation of the entire neuraxis.

Both the hypoglycemic and convulsant treatments have in common a decrease of brain metabolism. In insulin hypoglycemia, metabolic depression is the result of lack of blood sugar.³⁷ During convulsions it is due to lack of oxygen.^{38, 39} There are two causes for the lack of oxygen in the convulsant therapies. One of them is interference with respiratory movements preventing the oxygena-

TABLE 3. EFFECT OF ELECTRIC SHOCK ON HEMOGLOBIN SATURATION OF ARTERIAL BLOOD

Patient No.	Hemoglobin saturation, per cent	Reaction
1	91	Incomplete
	78	Incomplete
2	50	Major seizure
3	42	Major seizure
	8	Postconvulsive apnea

Legend: Electric shock diminishes the hemoglobin saturation of arterial blood below the average normal value of close to 100 per cent. A major seizure lowers the oxygen content more than an incomplete one, and a period of postconvulsive apnea diminishes the oxygen content most.

TABLE 4. EFFECT OF METRAZOL CONVULSIONS ON HEMOGLOBIN SATURATION OF ARTERIAL BLOOD

Patient No.	Hemoglobin saturation, per cent
1	42
2	49
3	50
4	62
5	68

Legend: Metrazol convulsions diminish the hemoglobin saturation of arterial blood below the average normal which is close to 100 per cent.

tion of blood as it traverses the lungs. Tables 3 and 4 show that the arterial blood going to the brain is depleted of its oxygen during a convulsion. The other cause for the cerebral anoxia is an activity of the neurones so stepped up by the stimulation that even if the oxygen supply were normal it could not meet the demands of the overactive nervous tissues.⁴⁰ The brain, therefore, must suffer from anoxia. Thus all the "shock" therapies so far used include an element of depression of brain metabolism. What relation this depression of the brain or any of the other changes produced by these treatments has to the amelioration of the diseased processes is a question for the future.

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THE PROBLEM OF FRIGIDITY

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The medical problem of frigidity has since days of old been overburdened with nonmedical ballast. This ballast centers essentially about the question of whether frigidity may not be after all the natural behavior of the highly moral and cultured woman. According to this theory, it is the direct characteristic of the respectable woman not to feel sexual pleasure, to reject everything sexual as indecent, or at best to submit but passively to sex. The physician, in the present writer's opinion, need take no stand whatsoever on these questions. They simply lie outside the realm of medical competence.

The physician's interest begins with the medical problem of frigidity. This problem comes to him under two conditions exclusively.

First, when he realizes in a psychogenic case that the woman is to be cured only by regulating her sexual life. This correct diagnosis is seldom made; usually a multitude of hysterical symptoms involving various organs are isolated and treated organically, and the question of the sex life is not even touched upon.

Second, when a patient calls directly for the help of the physician regarding her disturbed sex life and wants to be cured of her frigidity. This condition probably occurs even less often, because shame and lack of knowledge on the part of the patient seal her lips. Thus occurs the grotesque situation in which neither does the physician ask nor does the patient voluntarily speak, and a great hush-hush play begins about a problem that concerns from 70 to 80 per cent of all women.

On the other hand, it would certainly be senseless to instigate a propaganda campaign to eliminate the too-common phenomenon of frigidity. Worse still, it would be dangerous, for this reason: Some women feel no particular complaints resulting from their frigidity of many years standing; an all-too-impertunate publicity could bring them into a premature psychic conflict. It is not that medical science cannot cure frigidity. Cure is possible with Freudian psychoanalysis, but the amount of time that one must give to the individual patient (an appointment five times a week for a

minimum of eight months and a maximum of two years) is so enormous; and the knowledge of the physician in treating this disease so specialized, requiring a period of years for acquisition, that mass treatment is out of the question. As a mass problem, the question of frigidity is, unfortunately, not to be solved.

The writer has, up to this time, mentioned the word "frigidity" a few times but has not yet explained what is meant by it. The definitional and terminological demarcation of this malady is complicated, and there is by no means complete agreement over it. The first theory—let us call it the sexual-rejecting theory—has already been touched upon. According to this, frigidity is no clinical entity; the problem is a sham one; the frigid woman is not ill and not in need of treatment, but the emotional woman is unchaste.

The second theory—let us call it the popular one—originates with the patient herself. When a sexually disturbed woman complains to a physician of her lack of sensation in coitus, she will protest angrily that she simply is not frigid when the physician perhaps asks whether she has been frigid since the beginning of her adult sex life or whether her complex of symptoms has developed only gradually. Then it develops that the patient understands frigidity to mean the complete lack of interest in sex. She, of course, can be aroused; she merely cannot experience an orgasm, that is, a release from sexual tension. The therapist cannot work with this tearful attitude, "I want to but I can't," because it generalizes a special case and takes as its basis an affirming or a rejecting motive. Let us take two examples from the symptomatology of impotence: The man who fails at coitus and the man who does not even attempt it, rejecting it upon ideological grounds, are both victims of potency disturbances. The affirming or rejecting motive is a criterion of the extent of the neurosis and nothing more. The behavior of the frigid patient who, on the one hand, complains of her frigidity and on the other hand, denies that she is frigid indicates to the physician that there are evidently various degrees of frigidity.

A third theory deals in general terms with the extent of emotional satisfaction of the woman in coitus. Yet if one were to press its proponents for an answer as to what they understand by emotional satisfaction—for instance, if they include in this term or-

gasm experienced, not during coitus, but after coitus, in the clitoris, through masturbation with the help of the man—one would receive the laconic reply that it is unimportant where and when the sexual tension is released provided it is released. Pressing still further the defenders of this theory—let us call it the clitoric theory—one learns that they either have no precise conception of the entire vaginal orgasmic capacity of the woman, or deny its existence altogether, having the unexpressed view that the woman is really sensitive sexually only in the clitoris, needing no orgasm-like release and being satisfied with a “general excitation.” The proponents of this belief even use biological impulses to strengthen their attitude. They refer to the facts that masturbation, regardless of whether it is carried on alone or with the help of the man, is clitoric and that, furthermore, even the healthy woman requires preliminary excitation because her “excitement curve” progresses more slowly than does that of the man.

It is difficult to understand why the proponents of this theory speak of coitus rather than of masturbation as the basis of normal sexual behavior. Actually, according to the “clitoric” theory, sexuality is masturbation *à deux*, while the general custom is to regard masturbation as infantile and coitus as the adult form of sexual satisfaction. Furthermore, psychiatrists know that neurotics remain masturbationists throughout their lifetimes, whether they consciously find more pleasure in this or whether they lead a “double sex life,” an unsatisfying “alibi coitus” and a satisfying, though guilt-laden, masturbation. A further objection to the clitoric theory is that, according to it, one would have to designate pathologic cases such as the following as “normal:” a masochistic patient who lets herself be beaten by a sadistic man and attains orgasm through cunnilingus alone; or a patient who performs fellatio on the man lying on his back while he slaps her with all of his force on her buttocks, then masturbates for half an hour to achieve clitoridian orgasm. The formula, “Orgasm is orgasm,” is wrong, and these examples reveal that this theory does not cover the clinical facts.

A fourth theory, the vaginal, defines frigidity as the incapacity of woman to have a vaginal orgasm. It is of no importance whether the woman is aroused during coitus or remains cold, whether her

excitement is weak or strong, whether the excitement breaks off at the beginning or the end of coitus, slowly or suddenly, whether it is dissipated in preliminary acts, or has been lacking from the beginning. The sole criterion of frigidity is the absence of vaginal orgasm. This theory describes the normal coitus of the woman as follows:

The normal sexual act of a woman includes three stages: First the genital becomes moist and there is an erection and pulsation of the clitoris. The pleasure in physical contact, embraces and kisses, is followed by the imperative wish for the entrance of the penis. Then the desire for friction commences. The woman is aware of its gradual increase and desires its continuation. At the same time as, or, perhaps oftener, directly following, the orgasm of the man, the woman's orgasm takes place, accompanied by involuntary muscular contraction of the perineal and pelvic region, followed by the feeling of release from sexual tension. In contrast to the man, whose ardor subsides more quickly, the woman still wishes, even after orgasm, to remain united, to lie entwined, to keep the penis within her.

One may ask, after hearing four theories of frigidity, whether it may not be splitting hairs to lay so much stress upon the question of whether a clitoric or a vaginal arousal is achieved. What is the difference? Perhaps it is really important only that the woman succeed in obtaining some kind of satisfaction. One might even add optimistically that when a woman is aroused at the clitoris by preliminary acts, this arousal will be intensified during coitus. Here one runs into a factor that is unfortunately neither theorized, classified, nor of terminological nature. The writer refers here to an *anatomical* factor. When one considers anatomical facts for a moment, he realizes that for purely anatomical reasons the clitoris does not come into contact at all with the genitals of the man during coitus. Here again is an indication of the truth of the words coined by Freud, "Anatomy is fate." Thus, there can be no mechanical intensification of arousal of the clitoris through friction during coitus, and the transfer of arousal from the clitoris to the vagina is purely psychological, that is, an unconscious factor. And, with the frigid woman, this purely psychological factor is disturbed. Thus, the problem of frigidity is reduced to a psychological basis.

In other words, the confusion over what constitutes frigidity arises from the fact that there are, so speak, two sexual organs of the woman: the clitoris, which plays the leading part in childhood and in adult masturbation, and the vagina, which remains undiscovered for the girl until puberty, psychologically speaking. For the adult woman, however, the clitoris is no longer the deciding sexual organ; the vagina takes its place. The transfer of the zone of excitement from the clitoris to the vagina is frustrated in the frigid woman—or this ill woman remains at the infantile zone of excitement.

To avoid misunderstanding, let the writer make it clear that he is speaking here exclusively of cases in which the organic examination reveals no disturbance of the inner or outer genitals, that is, of typical cases in which no hormonal disturbances are present and no infantilism. What the typically frigid woman suffers from, is not a deficiency of the libido but a neurosis, that is, an illness of the unconscious. For this reason, hormonal therapy is unsuccessful in typical cases.

Before going into details, a general typology of frigidity will be considered. The typical disturbances of the frigid woman in coitus are manifold, but they can be schematized in the following groups:

1. *Total frigidity with vaginal anesthesia.* The woman is wholly without sexual interest during intercourse. Feelings of repulsion, disgust, and the desire to "get it over with in a hurry" replace all traces of vaginal pleasure. The lubricating glandular secretion is absent, and there are no sensations in the vagina or clitoris during preparatory sexual play. Vaginismus is the highest degree of this form of frigidity; in it, are found fear and active defense, cramp of the sphincter, impossibility of intercourse.

2. *Total frigidity with vaginal hypoaesthesia.* Slight excitement is felt at the beginning of intercourse, remaining at the same level throughout the act. The clitoris is very slightly sensitive, and there are traces of glandular secretion. Involuntary muscular contractions are absent.

3. *Relative frigidity with vaginal hypoaesthesia.* Relatively strong excitement is experienced at the thought and expectation of coitus; but, in bed with the immediate prospect of the act, all desire disappears. The other conditions are as in Group 2.

4. *Relative frigidity with vaginal sensitivity but sudden cessation of excitement before orgasm.* Relatively strong excitement is felt, with minimal disturbance of vaginal sensitivity, the excitement rising until the moment when the involuntary muscular contraction should begin. Then the excitement suddenly (seldom gradually) ceases, and orgasm is not achieved.

5. *Clitoric orgasm with vaginal hypoaesthesia.* A clitoric orgasm is attained after coitus entirely through friction of the clitoris applied by the man. Sometimes this friction must be continued for a quarter to half an hour. No vaginal orgasm is achieved, although excitement and secretion of the Bartholin glands are ample.

6. *Frigidity of the nymphomaniac type.* Strong excitement is experienced, mounting repeatedly but never resulting in orgasm. Women of this type seek men insatiably and yield to them indiscriminately.

7. *Obligatory and facultative frigidity.* A woman may suffer from obligatory frigidity; that is, she may have any of the disorders just described consistently, with all men. Or she may suffer from facultative frigidity; that is, she may usually have disorders of the types described but experience normal orgasm with certain men under special neurotic conditions.

8. *Pseudofrigidity as distinguished from true frigidity.* Groups 1 to 7 inclusive represent true frigidity. To be distinguished from them is pseudofrigidity, which is due to ignorance, clinging to false sexual theories, incorrect technique, etc.

The writer would like to call special attention to two facts. The first is that the involuntary contraction of the pelvic and perineal muscles at the end of the sex act is the one and only sure criterion that a man can use to determine whether the woman is frigid. A man can be deceived by a clever woman in many things—in love, sensitivity, sexual interest, pleasure in intercourse. In only one thing is she helpless—the production of involuntary contractions. Over the muscles involved in these, she has no conscious control. Inasmuch as the man feels these contractions at the end of the act, any attempt at simulation is impossible.

The second fact to which attention should be called is that, while the absence of glandular lubricating secretion during coitus is a sure sign of frigidity, the converse is not necessarily true; the

presence of the secretion does not exclude the possibility that one of the previously-mentioned lighter forms of frigidity may exist.

Neither the absence of secretion nor that of muscular contractions is perilous to the deceiving woman, however, because men know little of the existence of these phenomena. In general, it can be said that men stand in a position of absolutely stupid naïveté regarding problems of frigidity. Proof of this is found time and again in the consultation room, where a woman who begins treatment for frigidity perhaps begs the therapist not to mention her frigidity to her husband, who believes that she is beginning a cure of "general nervousness." When one asks how long the woman has been married, it is discovered that she has been married 10 years, for example. "And your husband noticed nothing of your frigidity during these 10 years?" one asks in astonishment. "Oh, men are so stupid in these things," answers the woman contemptuously.

When one asks oneself why men are so naïve in these matters, the following possible answers are found.

First, there is the exaggerated narcissism of the average man. Without the slightest reason for so doing, the man assumes automatically that the woman feels sexually.

Second, there is the psychic scotoma conditioned by an unconscious will to overlook a painful fact, such as frigidity—an oversight that certainly spares the man many an unpleasantness, although not unconscious unpleasantness, for his chronic oversight tends to mobilize the woman's hate. Nothing is more painful to a frigid woman than to see, after the sexual act, the pleasurable feeling of the satisfied man, who has no inkling that she herself is frustrated.

Third, there is the peculiar reaction of a man to the knowledge that his wife is frigid. He knows nothing of the existence of a neurosis and its typical frigidity symptom and so takes the blame upon himself. Nothing is more laughable and, if you will, more tragic than a potent husband who believes he is responsible for his wife's frigidity. To be sure, his wife often maintains this myth in order to appease her own guilt feeling. Always, someone else is to blame. The objective fact of the neurosis is seldom reckoned with, because so few know of its existence.

Psychoanalysts are, of course, far from understanding the frigidity problem today in all of its details, and there is plenty of room for whole generations of scientific investigators. A decade and a half ago, there was a very plausible theory that every neurosis was connected with a sexual disturbance. The theory was wonderfully simple; unfortunately the clinical facts are somewhat contradictory. It is true that nearly every symptomatic neurosis is connected with a form of sexual disturbance; this is, however, not the case with the so-called character neurosis. The majority of the character neuroses display apparently no, or no essentially direct, sexual disturbances. Orgasm is found even in some forms of symptomatic neuroses, for instance, it is found for unexplained reasons in certain cases of agoraphobia. In a psychoanalytical way, one thanks Freud and some of his pupils for much of the present understanding of the problem of neurosis. But a great deal, particularly on the course of the development of female sexuality, still awaits unriddling.

The writer hopes he has given, so far, a brief glimpse into the complexity of the problem of frigidity. This impression of the complexity of the problem would be strengthened if he were to recount the special forms of frigidity that are known, for the symptom of frigidity is present in every degree of neurosis, in the simplest and most complicated neuroses. To explain the special forms, would involve presenting a cross-section of the entire analytical theory of neuroses. This is obviously impossible here; but it was done by the writer's chief, Edward Hitschmann, M. D., at the Vienna Psychoanalytical Clinic, and the writer himself a few years ago, in a monograph in which they published the results of their 10 years of clinical experience in psychoanalytic treatment of frigidity in that clinic.* They enumerated 18 forms, of which the prognosis and length of treatment were quite different. Since publication of that monograph, they have gained in experience, and today the writer could name at least 25 forms. To do this, however, would be as confusing as impracticable. The writer has decided, therefore, to limit himself to a presentation of three of the most

*Hitschmann, E., and Bergler, E.: *Frigidity in Women. Nervous and Mental Disease Monograph Series No. 60.* New York. 1936.

typical forms: a simple one, a complicated one, and one that is unusually complicated.

TYPE I. Imagine a beautiful, coquettish woman with a great deal of natural, and still more artificial, charm. At first glance, she impresses one as being thoroughly womanly, the personification of "sex appeal." Everything about her revolves around sexuality; every word and every glance seem to be sexual challenges to a man. Adaptable, always identified with the present opinions of the present man, fickle in her interests, not too serious-minded, apparently always in search of a good time, this woman offers, however, quite a different picture when one does not see her in the rôle of the "glamour girl." Easily excited, easily angered, aggressive and jealous, concentrating with difficulty upon an interest, she is easily depressed and of a tearful nature; and she must receive constant confirmation of her irresistibility from men. If she is in a room with 10 men, and only nine pay her homage, she must win the tenth, who is resistant and uninterested, and she is deeply dejected if she does not succeed in this without further ado. Her interests are disconcertingly changeable: What is shibboleth today is uninteresting tomorrow. Such a woman always admires and is interested in something, but the object of her admiration and interest changes every few days. She treats her husband, who is no longer to be captured, aggressively. She is irritable, makes herself conspicuous, makes a laughing stock of her husband in public and worries him with costly whims and expenses.

The sexuality of a woman of this type is not at all what her brilliant façade seems to indicate. She always suffers from one of the previously-described forms of frigidity. When one analyzes her, one finds that she is full of unconscious hatred for the man, whom she cannot forgive for the very fact that he is a man. To the uninitiated this may sound laughable. It can be documented, however, with clinical facts (to be sure, only in the analytical treatment) that every small girl is a boy in her fantasy, with all of the sexual requisites. When at last she takes cognizance of her femininity, she regards it, not as a biological fact, but as a castration, and feels an unconscious hatred for the man. The woman just described is unable to overcome this original fantasy of being a male and to accept passivity. She pays with frigidity for her unconscious masculine identification and jealousy of the male.

The question naturally arises as to what happens normally to these active masculine energies of the girl. They are changed, in a "shift of passiveness" in puberty, partly into sexual passivity, but for the most part into normal activity sublimated to vocation and other interests. The conception that some neurotic men have of the woman as the embodiment of passivity, tenderness, and odalisque inactivity is entirely erroneous. It is known that the woman in the sexual act itself must accept inwardly, that is, unconsciously, the passive rôle or suffer automatically from frigidity. It is wrong, however, to draw the conclusion that the normal woman is also passive in her other activities. Her normality is brought about by the fact that her passive tendencies are fully used in sexuality, her active tendencies in her vocation or other interests. A man who rejects the active rôle of woman in life does so because unconsciously he is afraid of woman, that is, he is himself neurotic.

This unconscious wish for masculinity on the part of the woman is complicated by the fact of an unresolved Oedipus fixation. To-day, nearly everyone is familiar with that unlikely, even absurd-sounding but clinically provable part of Freudian doctrine that the first object of love of the child is the opposite-sexed parent. The writer cannot go into a discussion of this fact here, nor of the fact that it is the early fantasies and experiences of the child that are the deciding factors in the sexuality of the adult. He will simply mention that for the woman of the type described the man is unconsciously identified with the father. Since everything sexual was forbidden with the latter, then sexual emotion with the man now unconsciously identified with him is also forbidden. This reasoning is, of course, completely unconscious.

The prognosis for a woman of this type is excellent. One can cure practically 100 per cent of all such cases. It will be seen that this is not so with the deeper regressions.

TYPE II. The woman in this group characteristically looks entirely different from the woman of Group I. Think of a woman with a "housewife" complex, who constantly cleans, polishes, straightens things, and tyrannizes over the whole family with cleaning rags. Every particle of dust makes this woman ill. She is constantly over-worried: Something dreadful could happen to someone in the family. If one of its members is a few minutes

late, she imagines that he has been killed, kidnaped, or run over. The possibility of death constantly enters her thoughts, usually in the form of defense: Something could happen to someone. The pathological over-cleanliness has its effect on her own body. After every coitus, she spends several hours in the use of cleansing and ostensibly protective douches. She must always worry over something; if she finds nothing real, then she must make up some fantastic possibility. She constantly anticipates being overtaken by some evil. Every decision is painful to her; everything is held in suspense; nothing is decided. However, when she simply must make a decision, she reproaches herself with having "messed everything up." Observing her relationship to her husband and children, one is struck by a peculiar incongruity: She will show an exaggerated pseudotenderness at times, and in other moments give the impression of a deep underlying hatred for all of her family. She is surrounded by a remarkable nonsexual atmosphere, and could never have given rise to the concept of "sex appeal." Worried, overworked (often observing actual compulsions, such as washing or counting, or fearing bacteria, etc.), apparently and yet painfully sacrificing herself for others, pathologically avaricious, denying, fretful, a personified reproach, this woman is in all of her conception of sexuality ascetic, full of repulsion, and anxious.

The writer has tried to present here in a few words the outer picture of the so-called "compulsion neurotic character." When one analyzes such a woman, he learns that she unconsciously, without knowing it, of course, is constantly guarding against two reproaches of the conscience: "You want to play with dirty, sexual things," and, "you want to murder." Against both, she builds up unconscious reactions according to the formula: "I am unusually clean and unusually kind." However, her unconsciously-averted impulses are constantly smuggled into her defense mechanisms, and the unresolvability of her doubt, which cannot be corrected by logical means, represents the conflict, which cannot be resolved by itself, between impulse and defense. Needless to say, the entire conflict takes place unconsciously.

The woman of this type is seriously ill psychically, and it can be understood that, upon the psychic basis of this deeply aggressive

woman, no normal sexuality can take place. In long analyses, of one or two years duration, the disorder in women of this group can also be greatly improved. The chances of curing frigidity of that type are 75 per cent favorable.

For illustration of frigidity in this group, here is an example of the kind of apparent absurdities a woman of this type produces. A compulsion neurotic woman told, during treatment, of her defloration. During it, she had had the most annoying fear that she would be harmed inwardly so that she would no longer be able to control defecation and for the rest of her life would have to remain incontinent. She rejected the objection that the defloration occurred in the vagina and not in the anus with the words: "It all belongs together." One sees that this patient held to the cloaca theory. When she was asked by the man during the defloration "not to press so back there," she thought with fright, "If I do not press I will dirty up the bed with excrement." When the bed linen became soiled with blood through the defloration, she washed it out with her own hands on the ground that people would laugh at her because of her uncleanness (she meant feces). The patient entered treatment—after being married a half-year—because of a serious wash-compulsion that had persisted since puberty. She was full of anger and hatred for her husband after her defloration, and tried to "harm" him by constantly engaging him in intercourse. She was entirely aware of her lack of interest in genitality, but: "At least, the man shall suffer." Her weak husband constantly complained over a string of hypochondriacal troubles which he looked upon as traceable to the entirely too-frequent intercourse.

This very masculine, malicious, and thoroughly aggressive woman developed an interesting symptom regarding menstruation in connection with her defloration. She developed a state of anxiety that she could, through the remainder of her anally-perceived menstrual bleeding, harm her husband in some way. She often had the idea that she might even infect him with syphilis. Although rationally she well understood the nonsensical basis of her fear, its affective grounds constantly returned to the surface. The unconscious wish was: "I will harm my husband with menstrual blood." Even the abstruse fact came to light that she demanded coitus so often because she wanted to reassure herself that she had

not harmed her husband. As a result of her menstrual-venereal disease idea of harming her husband, she conceived subconsciously the notion that the penis would rot away. As is typical in such cases, the patient smuggled into her defense mechanism the averted fact, the aggression. That is, with the frequent, completely unsatisfying coitus she tortured the weakly-potent man, who essentially wanted rest and who considered her a kind of Potiphar's wife. In the idea of harming by means of blood, there was also discernible a reversal of the supposed harming of the patient by the man.

The writer has mentioned an "unusually complicated" type, Type III. The description of it may prove less instructive than frightening—because of its complexity. Descriptively, this type is very much like a type of hysteria; yet the similarity is simply outward. The woman of this type has essentially an aggressive, and only indirectly sexual, motive.

TYPE III. This ill woman suffers from the pressure of the following unconscious conflict. She wants to be revenged for an imagined lack of love in her first childhood; on the other hand, her unconscious conscience prohibits this revenge most emphatically. The unconsciously-attempted way out is based on the formula: "I will drive the 'wicked' outer world, which for me represents the 'wicked' (pre-Oedipal) mother, into a situation which forces it to deny my wishes; and then I can be at once aggressive without feeling of guilt and sorry for myself masochistically." "I want to receive" is replaced by "I want to be revenged." To be sure, this revenge is bound up with certain conditions that exonerate the woman from the inmost feeling of guilt roused by these aggressions.

For the sake of simplicity, two examples of this mechanism as found in impotent men will be given, since the mechanism, as found in the man, is more easily understood.

Example 1. A patient continually complained about his wife, reproaching her above all for her "malicious refusal" in sex. When the writer asked him of what this malicious refusal consisted, he replied that his wife was completely passive in sex. He had married a virgin who had a repugnance toward everything sexual, who in theory assented to coitus only because "one had to be normal." In addition, she wanted to play the part of the woman, passive and forced by the man. The patient, on the other hand, expected his

wife to take the initiative in intercourse, to "seduce" him. When the writer tried to explain to him that the wish to be forced was the virgin's typical attitude, this was met with complete lack of understanding. "What are you saying? I am to take the initiative? Ridiculous!" was his stereotyped answer. When the objection was made that with such an attitude he should have chosen an older and more experienced woman for his partner, he replied, acting offended: "Oh, if the woman took pleasure in it, the whole affair would give me no pleasure." It is apparent that the patient did not really want to have intercourse; he wanted only to drive the woman as the giver *ad absurdum*, and succeeded in this by means of a simple unconscious trick, choosing a woman who, like himself, wanted to be seduced, so that complete sexual inactivity lasting for years resulted. The patient's wife was still almost untouched when he came to me after seven years of marriage. Unconsciously, he transformed the sexually inexperienced woman into the "maliciously refusing monster" who denied him pleasure and toward whom he could, therefore, behave aggressively without feeling of guilt. He "denied" her coitus, did not even talk to her about sexual things for years, and pitied himself masochistically because of his unconsciously self-constructed bad luck.

Example 2. Another patient, who came for treatment because of ejaculatio præcox, said in the course of giving his life story, full of rage and hatred, that he had continually met with bad luck in all of his plans for marriage. The last attempt, for example, had failed because of the "malice" of his prospective father and mother-in-law and "lack of love" in the girl. He, a man of 32 years of age, had fallen in love with a girl of 18. When her parents made inquiries about his financial situation, he represented his income as 80 per cent lower than it really was. Alarmed at the prospect of such a misalliance, the parents, who were calculating business people, rich and rather purse-proud, opposed the relationship and influenced their daughter according to their views. When the patient's relatives heard about his "awkward behavior," they were horrified. They had impressed upon him that it was better to exaggerate than to belittle his income on this occasion. When the writer asked him why he had not simply told the truth, he answered that he had wanted only to "test" his parents-to-be. In

reality, he had wanted unconsciously only to drive the girl and her parents to a position where, instead of giving, they must refuse, so that he could enjoy the feeling, "Nobody loves me; nobody gives me anything (dowry!); therefore I may be aggressive and enjoy my unhappiness." The writer was able to show that the failure of his former plans of marriage had been brought about in a similar manner.

Now it may be asked how this tendency habitually to place the partner in the wrong expresses itself in the sexual disturbance of the woman. The woman feels a tremendous unconscious aggression toward the orally-perceived penis. In defense against this aggression, she does not accept the penis, often does not even feel it, her unconscious formula being: "It is not true that I am aggressive toward the penis; I don't even feel anything in coitus." At the same time she refuses to "give;" she denies the man pleasure and thus executes her revenge. The result is far-reaching lack of interest in sexuality, and frigidity. Since the woman leaves coitus without the slightest satisfaction, she constantly reproaches her partner, whom she unconsciously identifies with the original denying mother. One would suppose that a woman of this sort would not want coitus at all. On the contrary, like Shylock, she insists upon her just dues and wants coitus "to hoard." Every refusal of the act brings on anger, for here she finds a repetition of the situation: "Someone was unjust; therefore, I have a right to be aggressive."

The genesis or further details of this peculiar disturbance will not be gone into here. The chances of curing this most difficult of all types of frigidity are 50 per cent, following analysis over a two-year period.

Before giving a summary, attention should be called to a few typical misunderstandings. It is wrong to imagine that frigidity can be cured by mobilizing the conscious forces. Therefore, all attempts at persuasion and threats of punishment are in vain. The husband of one patient of the writer inflicted the following punishment on her: He threatened to get rid of her frigidity during intercourse by starting an affair with her best friend, to be continued until she would feel sexually. Mistakenly, he regarded an unconscious process as a conscious act of malice.

The opinion is also wrong that the man must have a certain technique, or even specialized knowledge of perverse tricks, to produce orgasm in the woman. Also, the present writer would observe, the healthy woman permits coitus only if she loves tenderly, and the needs of this feeling must be met. It is true that the graph of excitement in coitus shows a more rapid rise and fall in the man than in the woman, so that pre-pleasurable acts are in many cases necessary, but this by no means implies that special subtleties are required. Real tenderness and some experience are the best assistants.

A further and widespread mistake is the opinion that frigidity is only reactive. An impotent man or one with *ejaculatio praecox* cannot satisfy even such a woman as responds perfectly.* There are such rare cases, it is true; and here the man, not the woman, must be treated. But stressing the potency weakness of the man is often merely an alibi of the frigid woman. One must not forget, by the way, that the coldness of the woman has an influence upon the potency of the man. A sexually-rejecting behavior on the part of the woman can call forth a psychic sexual indifference toward her, even in a healthy man.

SUMMARY

Frigidity is a symptom of a neurosis, a disease of the unconscious. It is curable analytically, the prognosis depending upon the type, that is, the depth of the regression. The consequences of frigidity are tragic for the woman. They lead from dissatisfaction, depression, hysterical symptoms to the most typical defense mechanism—denial by the woman that she is ill and constant changing of husbands or male friends. Every new affair ends in the same psychic fiasco; yet the blame is always projected: The woman is not ill; the man is to blame. Years are spent on this everlasting and hopeless hunt for a man who will give satisfaction—but without discovery of the imaginary Casanova. The greatest Casanova is helpless against frigidity. It is not to be cured by tricks or by

*The whole problem of psychogenic potency disturbance in men is too complicated to be discussed here. See the writer's "Some Recurrent Misconceptions Regarding Impotence." *Psychoan. Rev.*, 27:450-466, 1940; and "Psychic Impotence in Men." Monograph, Medical Edition. Huber. Berne. 1937.

some special art of love-making. Let us not forget a point which calls for special emphasis:

Nine-tenths of all cases of infidelity on the part of the woman are traceable to frigidity.

From the standpoint of the frightened man, the question arises as to how one can diagnose outwardly the frigid woman. There are no means, with perhaps one exception—the psychic health of the man. Freud said once that every man possesses in his unconscious an apparatus by means of which he can feel and understand the unconscious of another. As a matter of practical fact, the psychically healthy man gives the frigid woman a wide berth. If a man does not, then he is himself psychically ill and feels himself unconsciously drawn to the neurosis of the woman. There is no accident in the choice of partners. Clinical experience indicates that it never happens that one marriage partner is neurotic and the other healthy. Usually two neurotics seek and find one another unconsciously. The neurosis of the woman often contains the complement of the particular neurosis of the man, and vice versa. The writer does not believe the unfortunate cases portrayed in novels and other myths, in which a healthy man is “taken in” by a seriously neurotic woman, and a healthy woman becomes the prey of a seriously neurotic man. If with this denial a lachrymose legend collapses (though never fear, legends are tenacious and run counter to all perils), the writer regrets it in the interest of the publishers and readers of novels. Science is, however, not a medium for conserving idealizing legends.

251 Central Park West
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ORGANIC PSYCHOSES SIMULATING DEMENTIA PRAECOX*

Report of Two Cases with Brain Biopsy Studies

BY PHILLIP POLATIN, M. D., VICTOR W. EISENSTEIN, M. D., AND
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INTRODUCTION

Organic psychoses usually present no diagnostic problem when disorientation, disturbances of memory or other gross sensorial defects appear. Difficulty is encountered, however, when patients display bizarre behavior yet are mute or otherwise inaccessible for adequate testing of mental grasp and capacity. Several investigators (Mayer-Gross,¹ Ferraro,² Erb,³ Shapiro,⁴ and others⁵ have demonstrated organic brain disease in cases originally diagnosed as catatonic or paranoid dementia praecox. Without an accurate knowledge of the sensorium, and in the absence of associated neurological signs, the diagnosis of organic brain disease is often impossible to establish by clinical means alone. In recent years, interviews conducted while the patient is under the effects of sodium amytal given intravenously,⁶ have sometimes been helpful in arriving at adequate appraisals of the mental status in such inaccessible cases. The air encephalogram and spinal fluid studies have likewise proved useful, but they are often impractical means of establishing the diagnosis of brain involvement in psychotic patients. Of the indirect aids to diagnosis of organic psychoses, even in early cases, the electroencephalogram appears to be the most promising, especially when correlated with the clinical picture⁷

The present writers here present the reports of two patients who were hospitalized for long periods in mental institutions as cases of dementia praecox before further investigation proved them to be suffering from organic disease of the brain.

CASE 1

M. L., a 45-year-old white, single female was admitted to the Psychiatric Institute on April 14, 1939, with a diagnosis of dementia praecox.

*Read at the annual meeting of the American Psychiatric Association, May, 1943.

HISTORY

M. L.'s maternal grandmother entered a state hospital in South Dakota at the age of 42 and died there at the age of 80. The diagnosis was dementia praecox. A paternal aunt entered a state hospital in Oregon at the age of 52 and died there 25 years later. The diagnosis was also dementia praecox. The mother died when the patient was 10 years of age. The father and the patient's three siblings are living and well. M. L. is the oldest child. The family is of the Catholic faith.

The mother's labor with M. L. was difficult, and the baby was born with one side of the face completely paralyzed (side unknown). This cleared completely in nine days. M. L. was a pleasant and friendly, outgoing child. At 14, she became pregnant, giving birth to an infant who was immediately taken from her and adopted; its whereabouts since are unknown. The patient completed her school work and business training, obtained good positions and succeeded in gaining prominence as an administrator and executive, working until the age of 41 (two years prior to admission). Throughout these years she was considered well-balanced, efficient, friendly and emotionally adequate.

At the age of 34, M. L. was involved in an automobile accident, thrown through the windshield and rendered unconscious. Further details are unknown. At the age of 39, she was examined because of a vaginal discharge, and a diagnosis of fibroid tumor and lacerated cervix was made. At 35, there seems to have been a change in her personality. Previously shrewd and discriminating, she now became extremely gullible and was victimized financially in a love affair. There were subsequent intermittent periods of preoccupation and despondency over this affair, but no overt mental symptoms.

About July, 1937, when the patient was 41, frank psychotic manifestations were observed with paranoid delusions, ideas of reference, agitation, depression and suicidal gestures. She was admitted to a large State hospital on December 30, 1938. It was observed there that her sensorium was clear. The physical examination was noncontributory with no mention made of the neurological examination. Delusions soon became bizarre; the patient held her fist clenched and declared that in this hand she had a whip

given to her by God to keep the devil away. It was felt that she was hallucinating. Six weeks after admission she was noted to be disoriented, and she misidentified people. Remote memory and memory for recent events appeared markedly impaired. Symptoms of self-absorption, mutism and withdrawal increased until she had to be tube-fed and required complete nursing care. After three and one-half months at the State hospital, she was discharged with a diagnosis of dementia praecox, paranoid type, and transferred to the Psychiatric Institute.

STATUS ON ADMISSION

At the Institute, M. L. was observed sitting in marked preoccupation, immobile, staring forward and completely apathetic. She was mute, with occasional facial grimaces. There was no response to pin prick or commands. Examination of her sensorium obviously could not be carried out. Her muscles showed a cog-wheel rigidity, and when the extremities were placed in awkward positions, they were so maintained indefinitely. The latter positions resembled those observed in *cereia flexibilitas*. She did not wet or soil, indicating her desires by emitting the single word "toilet." There was no drooling. The physical examination was noncontributory; and the neurological examination, as far as the patient's cooperation could be obtained, revealed no pathological findings. Laboratory data, including blood, urine, basal metabolism rate, electrocardiogram, and roentgenograms of skull, chest and spine, were all within normal limits.

Two days after admission to the Institute, the patient had a spontaneous excited period, walking about restlessly and shouting. Her remarks were irrelevant, bizarre, with scattering of ideas. This period lasted about two hours, when suddenly she reverted to her previous mute, apathetic condition.

INTRAVENOUS SODIUM AMYTAL INTERVIEW

About a week after admission, the patient received three grains of sodium amytal intravenously. This immediately produced a lucid period which lasted about three hours, during which time she talked spontaneously, walked freely and ate voluntarily; but she then relapsed into her mute, cataleptic state.

The intravenous sodium amytal injection was repeated on numerous occasions, always resulting in a relaxed, lucid interval, lasting from one to three hours, during which time the patient was relevant and coherent, answering questions promptly and manifesting a ready wit and a keen sense of humor. Her memory during these periods was fairly good for events of the remote past, but poor for the recent past. She repeatedly maintained that the year was 1937, and there appeared to be a tendency toward confabulation.

COURSE IN HOSPITAL

About five and one-half months after admission, in addition to her cataleptic state, M. L. developed myoclonic movements of the right thigh, soon followed by synchronous myoclonic twitchings of the left facial muscles, especially the orbicularis oris and risorius. These movements were continuous during her waking state, but ceased during sleep, as did the general muscular rigidity. The patient moved about in bed. At this time, too, she developed difficulty in swallowing, had to be tube-fed and for the first time, began to drool saliva. A neurological examination revealed hyperactive equal deep reflexes with no pathological reflexes. Abdominal reflexes could not be elicited. At this period, during the lucid interval induced by sodium amytal intravenously, there was as usual, a general muscular relaxation, although the muscles of the left upper and lower extremities seemed to be more spastic than the right. The myoclonic movements ceased with the administration of sodium amytal and returned when the patient reverted to the cataleptic state. Neurological examination during any lucid period revealed no other essential difference from the findings observed previously in the cataleptic condition.

ELECTROENCEPHALOGRAMS

The first definite indication that what was dealt with here was a case manifesting an organic pathological substratum in the brain occurred on July 27, 1939, when an electroencephalogram was taken. This revealed numerous potentials of a frequency of six cycles per second, or less. These low frequency potentials ranged from about three to three and one-half cps to six cps. They were

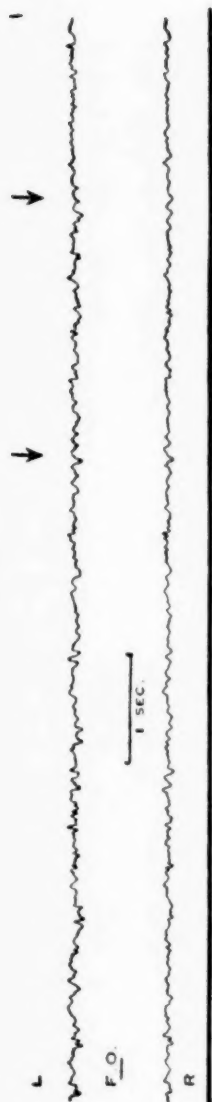
found in fronto-occipital leads, occipital-indifferent, motor-indifferent, fronto-indifferent, transfrontal, transmotor and transfrontal-transoccipital leads. It was felt that the record was definitely abnormal, indicating a general diffuse abnormality of cortical activity. Subsequent electroencephalographic observations of the patient under sodium amytal intravenously, revealed that before awakening from her stupor, she showed again repeated two to three cps potentials and some four cps potentials in the fronto-occipital, fronto-motor and motor-occipital leads. When the patient began to move and speak during the lucid interval after the amytal injections, the fronto-occipital potentials became much greater, the alpha activity increased, and again five to six cps potentials also appeared in the frontomotor and motor-occipital leads. The incidence of the alpha activity became greater and the amplitude increased. The other slow potentials of three, four or five cps frequency still persisted. (Figure 1, Case 1.)

PNEUMOENCEPHALOGRAMS

A pneumoencephalogram was done on September 28, 1939, and showed the entire ventricular system well outlined by air. The ventricles were of average size and revealed no abnormal contours or displacement. The cortical sulci, particularly on the left side, in the frontal and parietal regions, were unusually deep and their appearance suggested considerable cortical atrophy. No other abnormalities were observed. (Figure 2.) The spinal fluid revealed 14 cells, a normal colloidal gold curve, a negative Pandy reaction and total protein of 19 mg. per cent.

On August 29, 1940, about eight months after a brain biopsy was performed, another pneumoencephalogram showed the entire ventricular system well outlined by gas. The lateral ventricle on the right side, as compared with the original examination, had increased in size, but there was no significant displacement. There was also a large amount of air in the dural space over the left frontoparietal region, indicating that there had been atrophy of the brain in this region. The ventricles on the left side appeared to be within normal limits.

Figure 1



Case 1

Electroencephalogram from fronto-occipital areas showing occasional low frequency potentials (4 to 6 cycles per second) of low amplitude. Arrows indicate regions of slow waves on left F.O. record.



Case 2

Marked irregularity in rhythm and in wave forms; many 3 to 6 cycle per second waves, more marked on the left side.

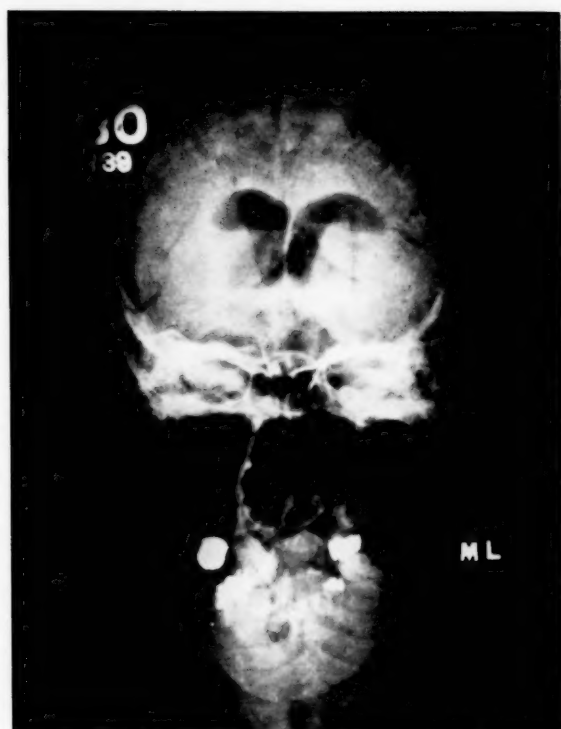
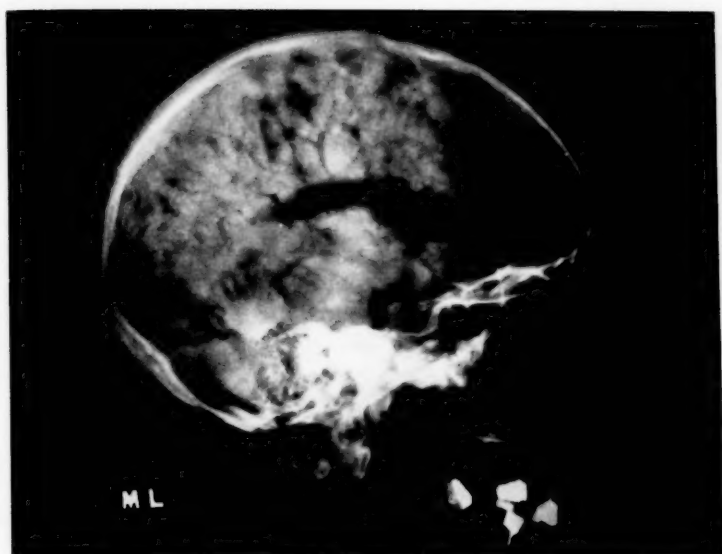
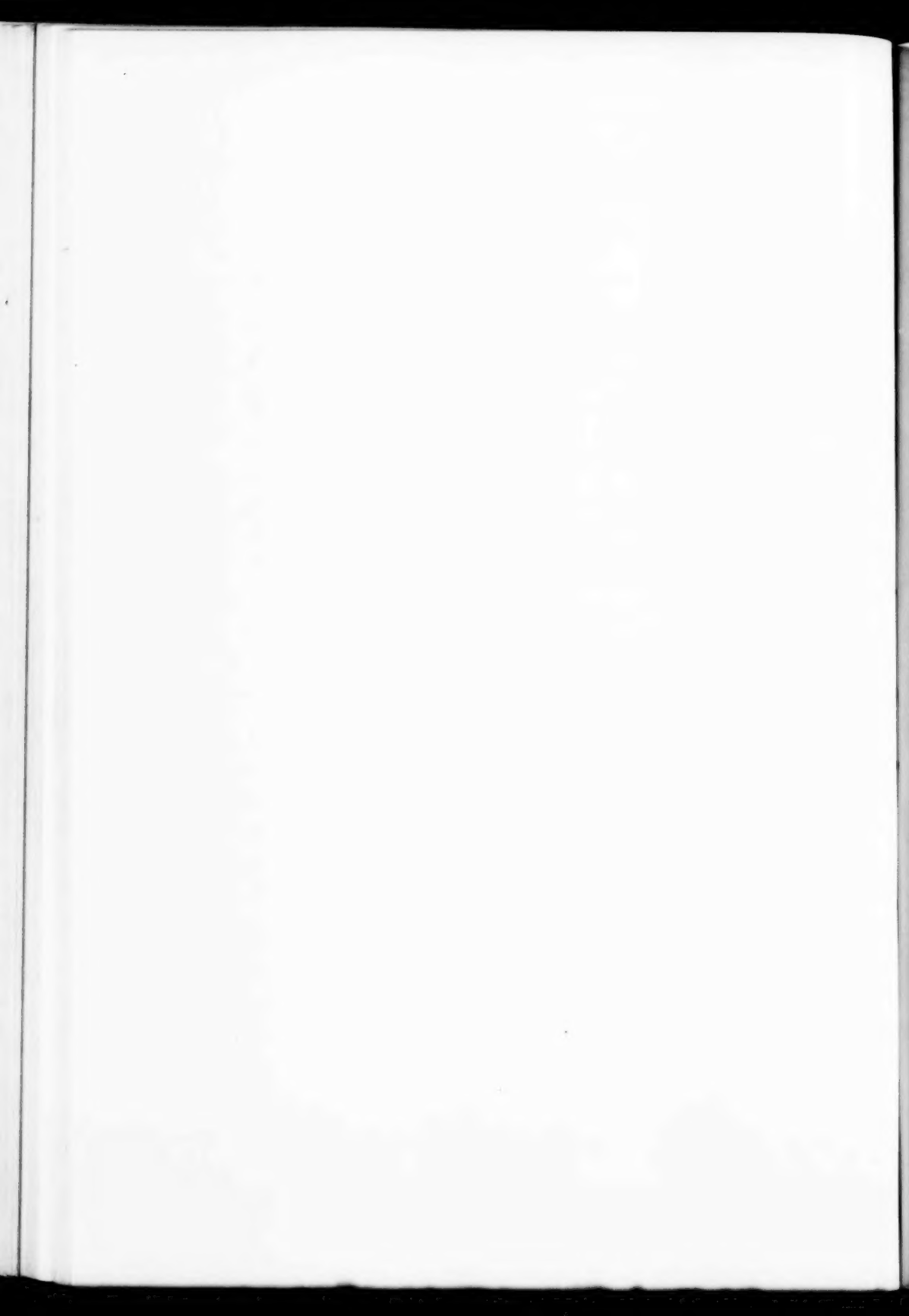


Figure 2



RORSCHACH TESTS

On October 23, 1939, a Rorschach test was given to the patient while she was under the effects of sodium amytal, given intravenously. The conspicuous features of this record were the great restrictions indicative of a severe inhibition of both the inner life and the emotional responsiveness. The record was definitely not schizophrenic. The findings suggested a retrenchment of the personality and indicated that the patient was seeking a narrower environment to which she could adequately respond, giving up a wider environment in which she used to live and which now caused her to feel inadequate. This reaction was said to occur in serious organic cases. Another Rorschach test was taken on March 5, 1940, again under sodium amytal intravenously, and it similarly suggested organic brain disease.

BRAIN BIOPSY

A brain biopsy for diagnostic purposes was performed at the Neurological Institute on December 18, 1939. A right frontal Frazier flap was turned without technical difficulty. The gyri were at once seen to be greatly narrowed and the sulci were markedly widened. There were great quantities of cerebrospinal fluid in the subarachnoid space between the gyri and to a lesser extent over the surface of the gyri. The gyri themselves were normal in color and firm to palpation. Approximately three centimeters from the anterior extremity of the middle frontal convolution, a block of cortex and the underlying white matter was removed. Approximately four centimeters posteriorly in the middle frontal convolution, a second block was taken. Each block was about one centimeter on a side. There was no evidence of increased intracranial pressure. The operation proceeded smoothly, and convalescence was uneventful. It was observed that following the operation, the myoclonus of the right thigh and left face gradually diminished and finally disappeared. Only on very rare occasions was the thigh myoclonus observed. The catalepsy, mutism and drooling continued.

Histopathological Findings

Blocks of tissue from the fronto-polar region of the right hemisphere were studied with the Nissl, Bielschowsky, Herxheimer, and Spielmeier stains. The Nissl stain at low power revealed a general diminution in the number of cortical neurons with, however, some retention of the main cortical layers (Figure 3). At higher power, the nerve cells showed shrinkage especially in the pyramidal cells which were smaller than normal, somewhat elongated and with pyknosis of the nucleus and uniformly deeply stained cytoplasm (Figure 4). More advanced stages, with only shadow cells remaining, could be seen. Changes were most marked in the third and fifth layers. There was no relationship of cellular change or loss to blood vessels, areas of severe cellular change often being observed close to areas of fairly normal tissue (Figure 5). There were some definite circumscribed areas of cellular loss. The glia nuclei were only slightly increased and showed occasional proliferative changes where the cellular destruction was greatest, but no degenerative glia could be seen. Fat stains revealed a small amount of fatty-like substance in the atrophic nerve cells. The Bielschowsky stain presented no senile plaques and no Alzheimer's neurofibrillary changes. The blood vessels were practically normal, with only occasional thickening of the wall of a smaller vessel. Spielmeier stain revealed no degenerative changes of the myelin.

There was no question that the process here was that of a slow progressive atrophic pathological change of the nerve cells. No signs of inflammation were present. Morphologic changes of the blood vessels were absent, making arteriosclerotic nerve cell changes improbable. Absence of senile plaques and Alzheimer's cell changes made a diagnosis of senile process or presenile process of the Alzheimer type improbable. It was possible that an early Pick's disease was present. There was no definite evidence of this, however, because the characteristic marked atrophy of nerve cells with glia proliferation was absent, as well as the nerve cell swelling and argentophile inclusions. One could see definitely, however, that in this case there was pathological evidence of a chronic progressive disease of the brain involving the cortical nerve cells particularly.



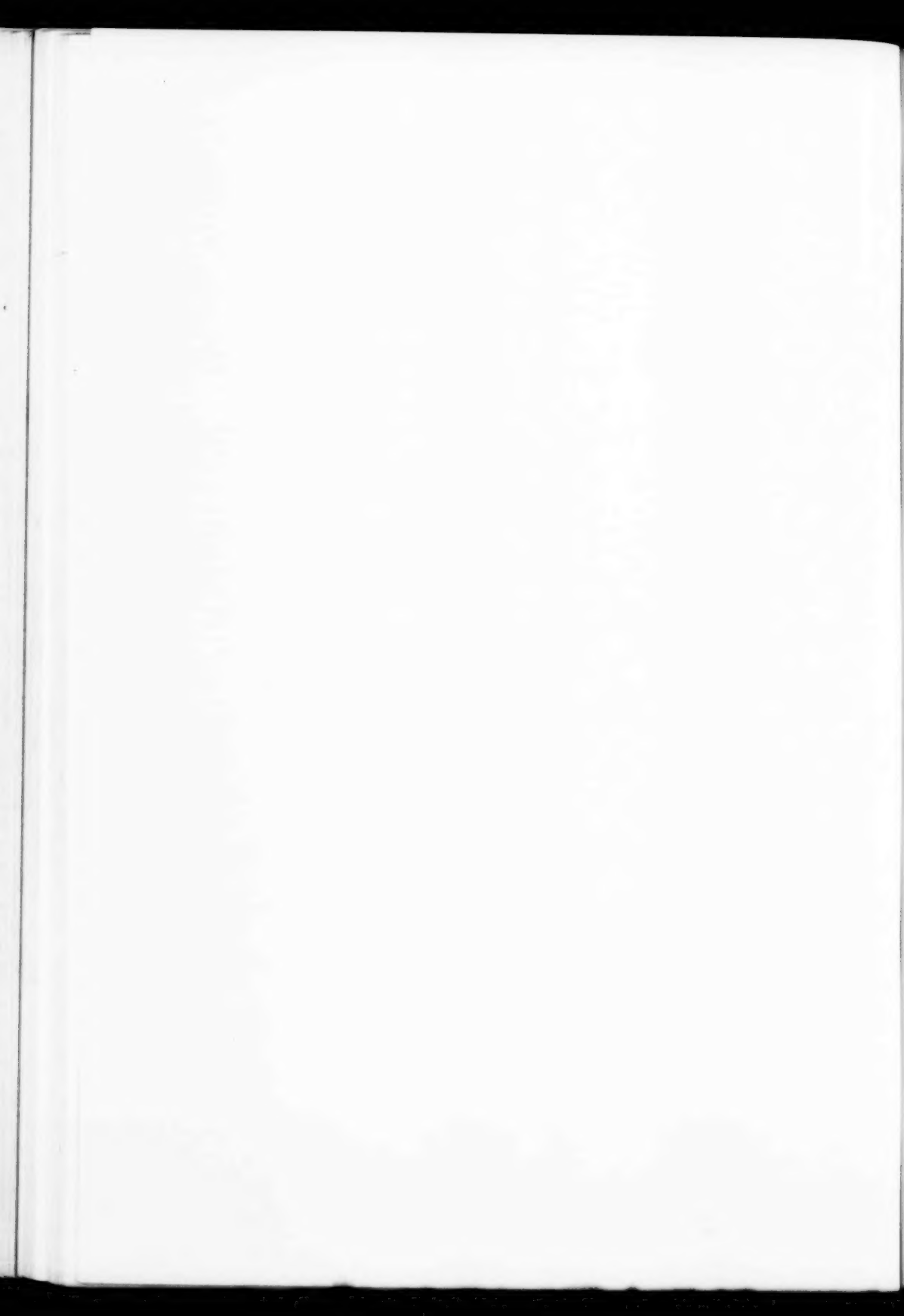
Figure 3. Low power Nissl preparation of the cortex removed at biopsy in the case of M. L. This shows the essential preservation of the cortical cell layers with areas of cell diminution. One large such area can be seen in the center of the specimen.



Figure. 4. High power Nissl preparation of the cortex of M. L. revealing shrinkage changes in some of the nerve cells with dark, uniformly staining cytoplasm and increased stainability of the apical dendrites. In close proximity to such cells, normal looking nerve cells still remain. There are other small areas in which the nerve cells have apparently disappeared. The changes bear no relationship to blood vessels but are diffuse and regularly distributed.



Figure 5. Medium power Nissl preparation of the biopsy specimen of M. L. revealing the diffuse irregular cell loss with shrinkage changes in many of the remaining nerve cells. These features are in close proximity to other normal appearing nerve cells.



ELECTRIC CONVULSIVE THERAPY

On September 3, 1940 (about 17 months after admission), treatment with electric convulsions was instituted. The patient had 23 treatments, resulting in 19 convulsions, the first of which occurred with 80 volts. The highest voltage used during the course of this therapy was 110. Treatment was discontinued on November 28, 1940, when marked improvement was evident. M. L. became ambulatory, relaxed, spontaneous in conversation, relevant and displayed more appropriate affect. A residual paranoid element remained. She is considered as socially recovered, although she still manifests marked defects in memory, especially for events in the recent past.

CASE 2

M. P., a single female, aged 56, for many years a novitiate in a religious order, was admitted to the Psychiatric Institute December 24, 1940. Since the age of 20, she had presented increasingly bizarre conduct, marked by seclusiveness and a religious trend so exaggerated as to preclude her final initiation into the order. She became progressively more withdrawn and solemn, threatened suicide and was committed to a mental hospital for the first time at the age of 44. She spent most of the ensuing 10 years in three other mental hospitals where her case was reviewed several times and classified as one of dementia praecox.

HISTORY

The patient was of Polish ancestry and was reared in Canada. Her father was a cross, domineering, abusive individual, whose mental traits prompted his family at one time to seek his commitment to a mental institution. There was no other history of psychiatric disorder in the family. The patient was the eighth of 12 children, all of whom were presumably free from mental disorder.

The patient's birth and early development were considered normal. At about the age of four, she is said to have suffered a head injury in a fall, was dazed for 24 hours, but was not unconscious. No sequelae were observed. During childhood, she was quarrelsome with her brothers and sisters, but was otherwise friendly, aggressive and somewhat domineering. At about the time of puberty,

she had both measles and scarlet fever, following which she is reported to have displayed a transitory speech defect. She was mentally adequate, was graduated from public school at 13, and three years later worked in a department store for some time. At the age of 19, M. P. suddenly decided to become a nun. The parents thought that this decision was odd, inasmuch as the girl had previously shown no great religious interest. She was accepted as a novitiate, in which capacity she remained for several years, but was never allowed to take the veil of a full cloistered nun since her disposition was considered "too melancholy and queer."

Living in a protected environment for about 20 years, the patient remained irritable, seclusive, spoke little and usually of "temptation," was frequently self-accusatory in trend. The onset of frankly psychotic conduct was insidious, but in April, 1930, at the age of 44, she is said to have become suddenly quiet, would speak to only two or three of the sisters, refused to work, feared to be alone, and expressed many self-accusatory delusions. At that time, she went into the garden of the convent and disrobed, saying that she wished to kill herself to atone for her sins.

She was then admitted for the first time to a state hospital, where she was found to be confused and disoriented and expressed the idea that the devil was in her clothing, waiting to harm her. Psychomotor activity was decreased. She could not concentrate; no memory loss was reported. She was then described as suspicious and fearful. She remained at this institution for six months, was diagnosed as dementia praecox, and was discharged as "improved." Two years later, at the age of 46, she was admitted to another mental institution. At that time, she was confused, restless, sleepless, overactive and was said to have wandered about the convent in her night clothes, appearing forgetful, saying that she heard voices, usually those of an old man who annoyed her, calling her a temptress and a sinner. She stated, "He cut my mother in pieces and put stable manure in my body. I am the mother of Infant Jesus." She was unclean and often required tube-feeding. The diagnosis at this time was probable dementia praecox.

In the following year, she was committed to a large state hospital. She stated then with a silly laugh, "They're going to set fire to the hospital and rob it." She complained of feeling drowsy

much of the time. There appeared to be a poor grasp of recent events. She gave items of personal identification correctly at this time. Calculation was correctly performed. She frequently refused to eat, saying that she would be eating her dead relatives. Wetting and soiling were noticed for the first time at this admission, and she masturbated openly then. She remained at this institution for eight years and became increasingly mute and inactive; was diagnosed as a case of schizoid depression. While there, in January, 1935, at the age of 51, M. P. developed a rigidity of gait which was not then interpreted by her attendants as of neurological origin, since the patient had previously shown catatonic attitudes. This condition progressed over the following five years until 1940 when the records indicated that the patient was mute and uncooperative, dragged the right foot in walking, presented an exaggerated knee reflex on the right and a positive Babinski sign. She was uncooperative for sensory and coordination tests. Organic brain disease was suspected and the patient was referred to the Psychiatric Institute for neurological studies.

PHYSICAL EXAMINATION UPON ADMISSION

The patient was fairly well developed. She was bedridden at the time of admission to the Psychiatric Institute. She appeared apathetic and did not cooperate on oral or written requests, although she understood some commands when given by gestures. The weight was 117 pounds, blood pressure 160/110, the heart somewhat enlarged, pulse 70, regular. The neurological examination revealed right hemiparesis, hyper-reflexia on tests and a Babinski toe sign. The pupils reacted sluggishly to light. The optic discs appeared normal; the vessels of the fundi were moderately sclerotic. The presence of aphasia could not be determined satisfactorily because of the patient's uncooperative state. She was able to use a knife and fork, but not a pencil; she imitated gestures, shook hands, made a sign of the cross by imitation and responded to a few simple manual commands.

The urinalysis and blood examinations were essentially negative. The blood Wassermann test was negative, Roentgenograms of the skull showed no evidence of increased intracranial pressure or abnormal calcification. The pineal body could be seen, and it showed

no displacement. Spinal fluid examination:—cells 2, total protein 40 mg. per cent; Pandy test negative; gold-sol 1111100000; Wassermann negative.

MENTAL STATUS ON ADMISSION

The patient was uncooperative during the entire period of observation. She lay in bed apathetically, paid no attention to the entrance of examiner or nurses. She resisted examination procedures, was frequently assaultive and attempted to bite those who approached closely. She ate spontaneously, using her fingers only. As a rule, she was incontinent of urine and feces. There was no spontaneous speech, but when annoyed, the patient gave vent to violent oaths: "*Diabile. Pshenklanti. Paris green. You want to suck blood. Meat!*" There were rare periods when the patient was responsive and answered questions adequately, but briefly. Some perseveration and paraphasia were then evident. Under the effects of sodium amytal administered intravenously, the patient uttered a few words, asked if her sister was still alive and thanked the nurses for their attention. She knew she was in a hospital, recognized the doctor correctly, named a few objects, such as key, coins, etc., but appeared otherwise markedly disoriented and was amnesic for the events of the previous 10 years.

PNEUMOENCEPHALOGRAM

Air studies revealed a considerable degree of cortical atrophy, more marked on the right than on the left side. (Figure 6.)

ELECTROENCEPHALOGRAM

The fronto-occipital leads (r and l) exhibited marked irregularity in rhythm and in wave pattern forms bilaterally. Many four to six cps potentials were present, with an occasional three cps wave of relatively high voltage bilaterally, but definitely more frequent and more marked on the left.

The frontomotor leads (r and l) exhibited fairly marked irregularity in rhythm, with rather high voltage output for those particular leads and the occasional appearance of six to seven cps waves bilaterally.

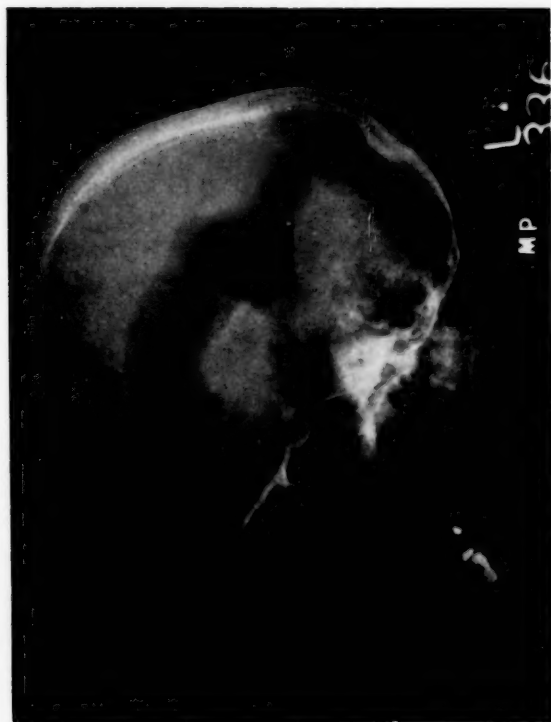
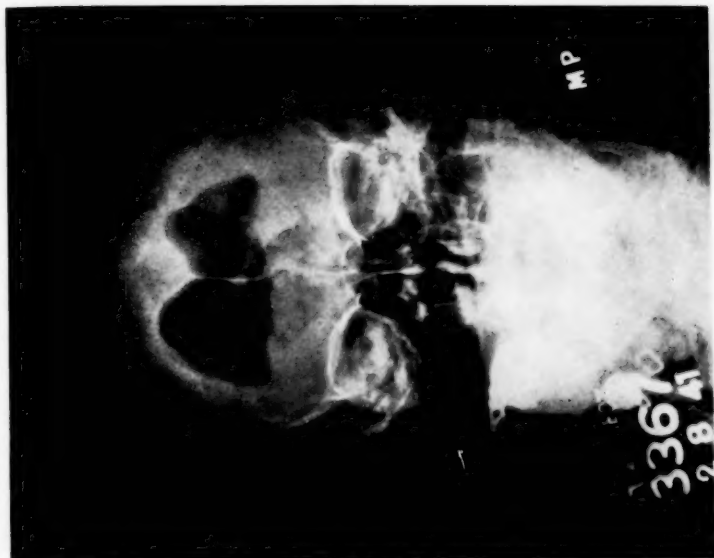


Figure 6



The motor-occipital (r and l) showed marked irregularity in the EEG pattern with some degree of asynchronism.

The transfrontal revealed irregular activity although dominated by beta rhythm. An occasional six to seven cps potential of moderate voltage appeared.

The transmotor leads revealed frequent slow, four to six cps waves of relatively high voltage, with marked irregularity in the general rhythm.

The transoccipital showed occasional four to six cps waves of high voltage with occasional series of 7.5 and 8.5 cps waves of moderate voltage.

Impression. The readings as a whole gave the impression of diffuse electrocortical dysfunction, with an area of increased abnormality in the left motor region. The type of abnormality suggests a fairly marked degree of cortical involvement. (Figure 1, Case 2.)

BRAIN BIOPSY (April 25, 1941)

Avertin local anesthesia was used. The brain was exposed through a small left frontal flap. The branches of the temporal artery were found to be markedly sclerotic. Upon opening the dura, an old subdural hydroma presented, and aspiration yielded six cc. of slightly xanthochromic fluid. Both the external and internal membranes of the hydroma were excised. The exposed cerebral cortex was markedly atrophic; the gyri and sulci being of about seven millimeters width. The vessels did not appear unusual. A biopsy specimen was taken from the cortex four centimeters anterior to the motor area. The underlying white matter was slightly yellowish in appearance.

Histopathological Findings

The specimen of cortex was sectioned and prepared with the same stains as those utilized in the previous case. In general, the pathological findings in this case revealed disturbances in the cyto-architectural structure, areas of cellular devastation, gliosis and vessel changes.

With the nerve cell stain, one could detect two main types of change. One was very similar to the previous case in which there was a rather diffuse spotty cell loss with all the changes described for the previous case, including shrinkage changes in the nerve

cells with no relationship to define vascular distribution. (Figure 7).

The other type of alteration was a more local process, with areas of cell destruction apparently associated with pathological changes in blood vessels (Figure 8). In these areas, practically all nerve cells had disappeared in regions associated with the distribution of the smaller intracortical blood vessels. In the regions of cellular loss, the blood vessel walls appeared thickened, the blood vessels themselves were tortuous and there was definite perivascular gliosis (Figure 8). It appeared also as if there were slight degenerative changes in the walls of some of the small blood vessels. In regions close to these blood vessels but outside of the circumscribed areas of cell loss there appeared to be some general increase in the cortical glia nuclei. This was not the case, however, in areas not associated with the cell loss which was associated with vascular change. Spielmeyer stains revealed no marked changes in the myelin. There were no senile plaques or Alzheimer's neurofibrillary changes, and there was no unusual accumulation of fatty-like substance in the nerve cells of the cortex.

There was no doubt that the process was a chronic pathological disease of the cortex in the regions studied by biopsy. The pathology seemed to be of two types. One of these was very similar to that seen in the previous case, showing essentially a slow chronic progressive degenerative change in the nerve cells not associated with vascular distribution. In all probability, it was not of the senile or presenile type of Alzheimer's disorder. However, in this case, there was the additional factor of circumscribed vascular sclerotic changes, with secondary areas of cellular loss. The exact origin of this part of the picture was not entirely clear. It might be inferred from the electroencephalograms and the air encephalograms that the changes described for this biopsy specimen were rather diffuse and not localized to the area removed by biopsy.

COMMENT ON CASES 1 AND 2

Differential Diagnosis

The original diagnostic difficulties in these cases appear to have arisen from two sources: (1) the striking similarity of the clinical syndromes presented to those of classical dementia praecox and (2)

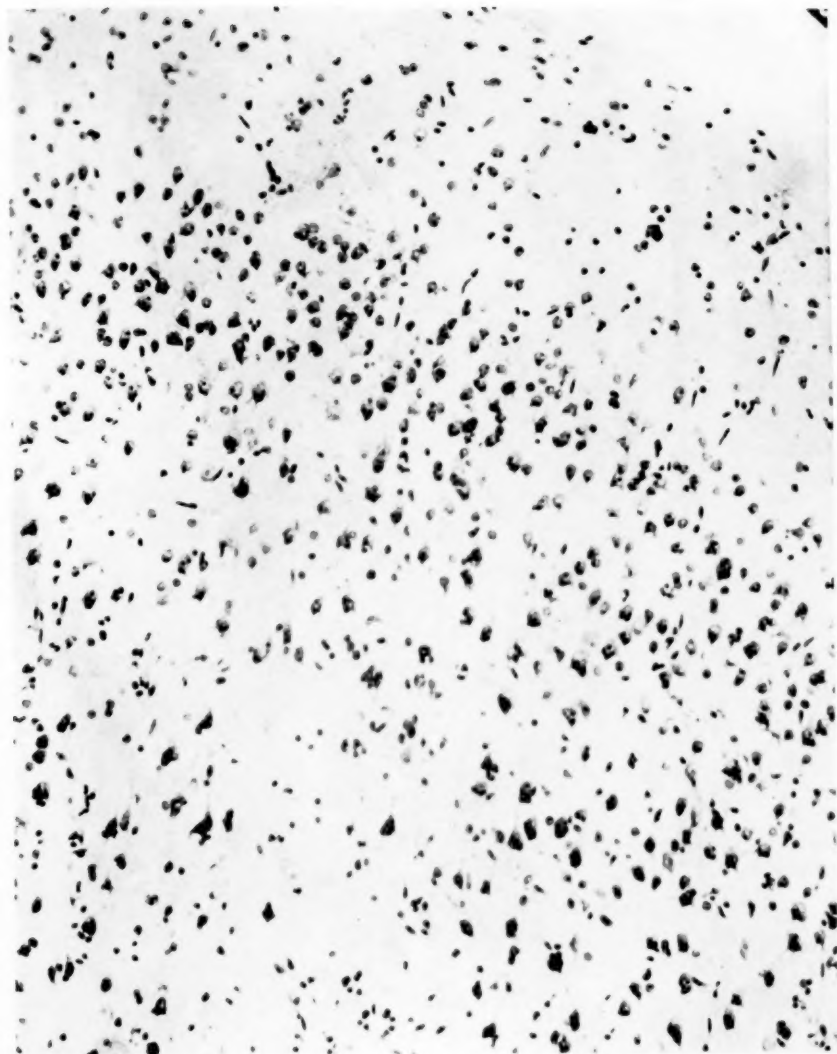


Figure 7. Medium power Nissl preparation of the cortex from the biopsy specimen in the case of M. P. This preparation reveals the irregular diffuse cell changes similar to those seen in the first case, with shrinkage of nerve cells which may be in close proximity to normal looking cells and which bear no relationship to vascular changes. The shrinkage however, is not quite so marked as in Case I.

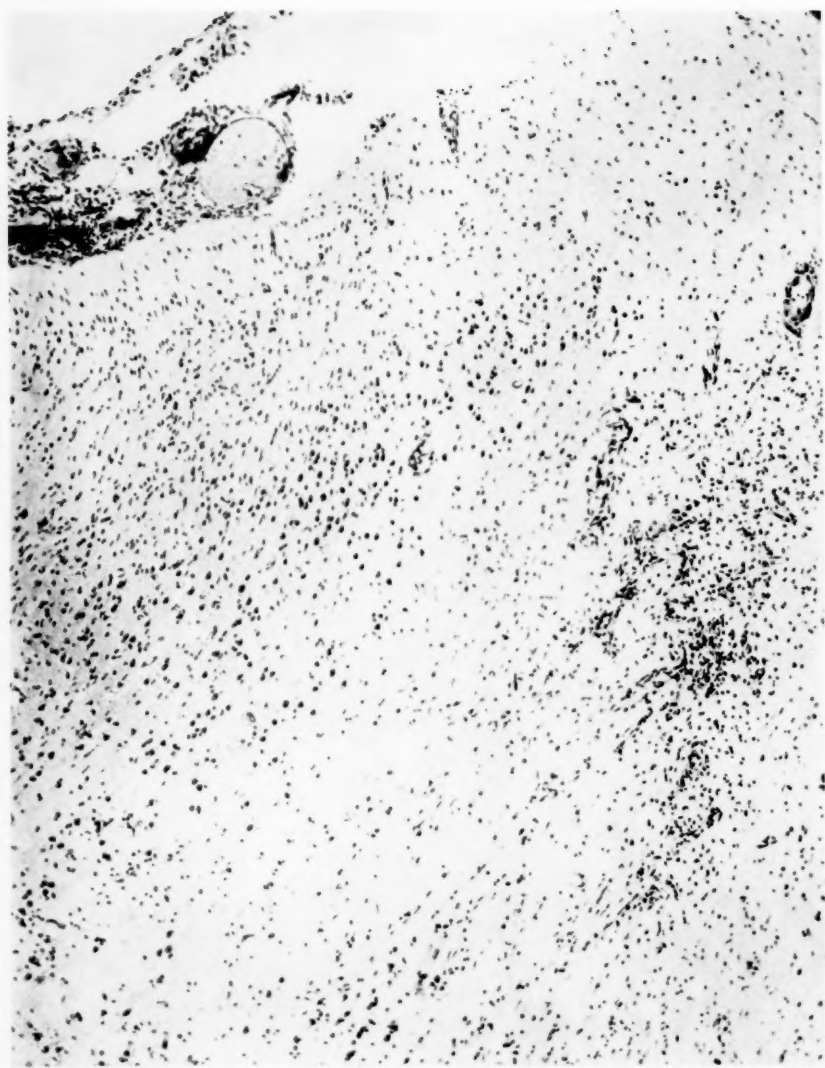


Figure 8. Low power Nissl preparation of the cortex of M. P., revealing the second type of change not seen in Case 1. This demonstrates the focal destructive process in relationship to diseased blood vessels. The small blood vessels show thickening with some degenerative change in the wall and surrounding gliosis with disappearance of nerve cells in the regions surrounding the vessels. This change is in addition to the more diffuse change seen in Figure 7 and is probably of vascular origin.

an improper evaluation of sensorial defects. The first symptoms to impress informants and examiners alike were seclusiveness, catatonic behavior, emotional blocking, paranoid delusions and hallucinations. In Case 1, *cerea flexibilitas* was almost classical; in Case 2, seclusiveness from an early age (20 years) was the outstanding feature. Memory disorders and defects in orientation and judgment were interpreted as being due to diminished interest in the world, preoccupation and the delusional state. At the time of subsequent examinations, obstacles were encountered in the relatively uncooperative state of the patients.

In a cooperative patient, auxiliary methods may point the way to a positive diagnosis of organic disease; in a noncooperative patient, everything possible should be done to gain contact in order to determine the state of the sensorium. Tests for aphasia, for example, are invaluable aids to the diagnosis of suspected organic disease; but they require cooperative subjects. Similarly, evidence of cortical involvement may be gained through Gestalt drawings, sorting tests and related psychological data, as suggested by Bender,⁸ Goldstein⁹ and others. In recent years, the Rorschach test has proved its usefulness in revealing suggestive "organic" signs, such as self-evident inadequate responses, paucity of movement responses, long reaction time, repetitious responses and color naming.¹⁰

In the examination of uncooperative patients, interviews under the effects of intravenous sodium amytal administration may reveal "organic" deficits in orientation and memory. The results with this procedure in psychological amnesic states have been described by Herman¹¹ in three patients who recovered their memories under the influence of the drug. The usefulness of the sodium amytal interview for revealing sensorial defects was well demonstrated in the present writers' patients, who were suffering from organic memory defects. While under the effects of the drug, the patient described in Case 1 gave details of the remote past correctly, but showed deficiencies in recalling the recent past, even to the degree of amnesia; and occasionally she would confabulate. In the second case, a short lucid interval with some communicativeness was produced by the drug; and gross defects in orientation and memory became apparent. The technique of subnarcotic ad-

ministration of sodium amytal has been described by Bleekwen;⁶ Lindemann and Malamud;¹² and Harris and Katz.¹³ The applicability of the Rorschach examination after the administration of sodium amytal intravenously has been described by Kelley and his coworkers. The ameliorating effects of sodium amytal have ordinarily been ascribed to the removal of "inhibitions" in "functional" psychoses. Why organic cases, such as those here reported, should enjoy a similar "lucid interval" following the administration of subnarcotic doses of intravenous sodium amytal is a question that requires further investigation. The amelioration of apparently organic strio-pallidal rigidity and tremor in Case 1 through the use of intravenous sodium amytal is also worthy of note. Similar "releases" from catatonic attitudes of psychogenic origin have been described by several observers.^{12,13}

The electroencephalogram offers a relatively simple means of confirming the clinical suspicion of the presence of organic disease. In Case 1 particularly, where one was dealing, upon admission, with a mute patient in whom the neurological findings were equivocal, the EEG alone offered a clue to the presence of a diffuse cortical abnormality. Rubin¹⁵ has made the diagnosis of localized cerebral atrophy by electroencephalography in nine deteriorated patients diagnosed as schizophrenic; in eight of these the pneumoencephalogram confirmed his findings. In his cases, there was no consistent relationship between the presence or absence of cerebral atrophy and the type of psychosis, the duration of illness, the history of head trauma or neurological symptoms. Pacella and Barrera^{7-a} have advocated routine electroencephalography in the examination of State hospital patients precisely because of the "occasional discovery of structural pathology of the brain in patients presenting psychotic and neurotic syndromes where no cerebral histopathology had previously been suspected, because of the absence of neurological signs, or only slight abnormalities which had passed unnoticed by the examiner." It is the present writers' impression that the application of electroencephalography to deteriorated "schizophrenic" patients who have been in mental institutions for many years might reveal a considerable number of cases which fall into this "organic" category.

Brain biopsy studies were made in the two cases reported in order to further the knowledge of the underlying pathological process in such disorders. Elvidge and Reed¹⁶ have reported a series of schizophrenic and manic-depressive psychoses in which biopsy studies have demonstrated definite histologic changes in the brain. At operation in the writers' cases, frontal flaps were turned, and sections of the cortex were taken from the frontal lobes. The histological changes in Case 1 suggested a chronic progressive degenerative brain disease; those in Case 2 indicated a similar process with an additional factor of circumscribed vascular sclerotic changes, with secondary areas of cellular loss of obscure origin.

In the clinical histories, both patients had records of head injuries at some time in life; both had suffered from infectious diseases in childhood. Whether the encephalopathy presented in these cases was etiologically related to either of these conditions remains doubtful.

Much might be added to our knowledge of such obscure cases by more extensive utilization of frozen sections, as well as of fixed tissue stains and appropriate methods for the differential study of lipoids, glycogen, oxidase and peroxidase reactions, mitochondria and sundry elements which have attracted the attention of neuropathologists in recent years.¹⁷ A similar approach toward furthering our knowledge of brain changes in "functional" psychoses has been utilized by Elvidge and Reed¹⁶ who definitely demonstrated swelling of the oligodendroglia cells in schizophrenia and in manic-depressive psychoses. There was, often, accompanying mild hypertrophy of the astrocytes. Two main types of oligodendroglial changes were described, that in which the nuclei were normal and that in which they were pyknotic. The change in the oligodendroglial cells in psychotic patients occurred in the white matter and was either general or patchy in distribution. At a depth of one centimeter and in the deeper layers, the change was often more intense.

A considerable degree of brain atrophy was demonstrated in both of the cases here presented. The nature of the final clinical picture, as well as the histologic changes seen on the biopsy sections in these patients, indicated a process akin to presenile encephalopathy. The original case descriptions of Pick¹⁸ and Alz-

heimer,¹⁹ as well as subsequent case reports, have indicated in the main that their patients exhibited marked failure of memory and disorientation before hallucinatory and delusional phenomena became evident. This sequence may be useful in differentiation of the presenile psychoses from schizophrenia. More often than not, the age of onset is a significant differentiating feature, yet it must be kept in mind that verified cases of Pick's disease early in life have been reported (Braunmühl and others¹⁸). The onset of frankly psychotic conduct in the forty-first and forty-fourth years, as in the cases here described points away from the diagnosis of dementia praecox, although cortical atrophy has been reported as occurring in a few cases of schizophrenia. Moore et al.²⁰ reported 50 cases of schizophrenia, ranging from 17 to 47 years of age, in which no history of birth trauma, head injury, encephalitis, etc., was present, but which, nevertheless, manifested pneumoencephalographic evidence of cortical atrophy predominately in the parietal lobe. Whether these were true cases of schizophrenia or "organic" cases which clinically resembled schizophrenia remains to be confirmed at autopsy. To determine the exact nature of the encephalopathy apparent in such disorders during life, brain biopsy appears warranted in selected cases.

PSYCHOPATHOLOGY

The present writers feel that a study of the psychodynamics in such cases as those presented might indicate the reason for the similarity in the clinical manifestations of such apparently discrete disorders as dementia praecox and organic brain disease. One must think in terms of what is happening to the total personality in organic as well as in psychogenic illnesses. Hinsie²¹ has stated: " . . . the somatic syndrome and its consequences cause the individual to take on a new attitude to himself and others—there is a break in the integrated psychic fabric and the higher psychic functions can no longer be maintained. Regression to earlier forms of functioning is the result." The organism with weakened adaptive resources, however caused, tends to constrict the environment to one in which it feels secure. Errors of thought and of perception may be affectively determined—as by the "complexes" of schizophrenia—and result in attitudes of suspicion and distrust and ul-

timately in delusions of reference. Similar errors may result from a poor grasp of the environment because of the impaired function of the brain itself, i. e., the cortical alterations of Alzheimer's disease, Pick's disease, etc. Kurt Goldstein has indicated that the similar personality changes in schizophrenic patients and those with organic changes are in both instances based on an impairment of abstract attitudes,^{9,10} i. e., the functions of the higher cortical centers. Mayer-Gross¹ has pointed out that it is sometimes impossible to distinguish psychologically the lack of volition evident in schizophrenia from the weakening of spontaneity in a patient with organic deterioration. He adds that anomalies of motor behavior (catatonia) which were regarded as diagnostically specific of dementia præcox by Kraepelin have frequent occurrence in organic psychoses. Bender and Schilder²² observed motility disturbances—mannerisms, catatonic behavior, grimacing, etc., in patients with subcortical lesions, as well as in schizophrenics. Hoch²³ and others, have reported catatonic attitudes, *schnauzkrampf*, grimacing, forced laughter, etc., in patients during insulin therapy, while Kardiner²⁴ and others have commented on the striking catatonic and Parkinsonian attitudes frequently observed in traumatic war neuroses.

A patient may be nonreceptive to certain environmental stimuli, either because of psychic preoccupation or because of brain deterioration. But whether the patient suffers from disorganizing conflicts which leave him emotionally inadequate, or from actual brain deterioration which results in sensorial inadequacy, he is vaguely aware of his diminished resources and may attempt to overcome the resultant discomforts and anxieties by fantasy. The paranoid syndrome, as is well known, may appear whenever there is a weakening of the adaptive resources, "in organic diseases of the brain, and other somatic diseases and in life situations giving rise to feelings of frustration, inadequacy, insecurity, failure, shame or social disorientation."²⁵ Such regressive and paranoid behavior is evident in the cases here presented in the archaic fears that the "devil" was threatening the patients. On the emotional side, the handicapped individual reacts to incomplete mastery of the environment by irritability and aggression. Schilder^{24,10} has suggested that energy accustomed to discharge through certain estab-

lished pathways may, if these channels are anatomically or psychically blocked, be discharged explosively through diffuse channels. The patient with organic brain disease may, like the schizophrenic, give vent to outbursts of rage and violence. Such emotional reactions are evident in both the present cases. In explanation of hallucinations, Levin,²⁶ elaborating on Hughlings Jackson's views, holds that whenever the function of the higher brain centers is "paralyzed," whether in schizophrenia or in organic brain disturbances, the lowest sensory centers present hyperacute vivid impressions in consciousness. The dynamic approach aids in understanding why loss of interest, catatonic attitudes, stereotyped and bizarre conduct, delusions, hallucinations, and other misinterpretations may occur in the course of both schizophrenia and organic psychoses.

TREATMENT

One fact regarding treatment is worthy of note at this time. To date, the application of electric convulsive therapy has been limited to the "functional" mental illnesses. In one of the writers' cases (Case 1) of proven "organic" origin, it is significant that the electric convulsive therapy resulted in marked and lasting (up to the present time) improvement in the clinical condition of the patient. In Case 2, this type of therapy was started, but discontinued after two sessions for reasons external to the treatment. The usefulness of electric shock in presenile psychoses or those associated with similar encephalopathies has not as yet been reported upon. In view of the relative scarcity of such cases, the result in this single case is worthy of record.

SUMMARY AND CONCLUSIONS

The reports of two patients are presented. Both are past the fourth decade of life and for long periods were in mental institutions as cases of dementia praecox. Further investigation, however, proved them to be suffering from chronic, progressive, degenerative disease of the brain. In Case 1, the electroencephalogram afforded the first definite clue as to the true nature of the illness, in spite of the fact that the patient had, for several months, presented the classical picture of catatonic dementia praecox. In Case 2 the

schizophrenic syndrome had apparently been present for over 20 years before the organic nature of the illness was recognized. The electroencephalogram revealed slow wave patterns in both patients. Intravenous sodium amytal interviews indicated memory defects. Pneumoencephalograms in both cases revealed cerebral atrophy. Rorschach tests suggested organic brain disease. Finally, in both cases, brain biopsy studies established the presence of irreversible changes in the cerebral cortex. In Case 1, electric convulsive therapy resulted in marked and lasting improvement.

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INSULIN AND ELECTRIC THERAPY IN GENERAL PARESIS*

BY PAUL J. TOMLINSON, M. D.

Insulin and electric convulsive therapies are by now generally accepted and well-established psychiatric treatment procedures. The rationale of their application in general paresis (psychosis with syphilitic meningo-encephalitis) is based on the premise that the psychotic syndromes precipitated by syphilis of the central nervous system bear direct relationships, in most cases, to the prepsychotic personality types. The most noteworthy exception is the type of case showing primarily gross organic deterioration and dilapidation because of the nature and extent of the luetic process.

The classical picture of a paretic, even though not seen so frequently as previously—a reduction in incidence which is probably due to the introduction of the arsenicals and hyperpyrexia—can readily be considered an expansive, grandiose paranoid, and consequently schizoid, reaction. Individuals with a prepsychotic schizoid personality who develop general paresis show the expansive paranoid type of reaction; but not infrequently a paranoid persecutory or catatonic picture is presented. The symptom complex appearing in a paretic who had a prepsychotic cyclothymic personality is usually typically manic in nature, and depressive states are rarely seen.

A large percentage of paretics shows marked and favorable response to the usual fever therapy followed by arsenicals and heavy metal treatment. This favorable response is to be noted especially in the typical expansive, grandiose cases. Frequently, a marked moderation, or even a total disappearance, of the active psychotic manifestations is seen during or at the termination of fever therapy. Yet, there are many cases which, even after the most intense course of specific therapy, show no improvement. The lack of response might be considered as indicative of a far advanced or malignant paresis where irreversible changes have occurred, or as an indication of a "double" psychosis. It would seem the more probable explanation that the psychotic reaction precipitated by the meningo-encephalitis continues unchanged in a certain percentage of cases, despite inactivation of the luetic process. Such patients,

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had they not developed paresis, might conceivably have become psychotic in the face of other precipitating factors. It is in such cases that insulin or electric therapy appears indicated and of benefit.

Thus far 18 cases of psychosis with syphilitic meningo-encephalitis have been treated with insulin or electric therapy at Gowanda State Homeopathic Hospital; 13 have received insulin, three electric shock, and two both insulin and electric shock. One had previously been treated with metrazol.

The first case to receive insulin therapy was a 15-year-old lad who had been diagnosed catatonic dementia præcox. It was not until some time after he had completed several courses of metrazol and a course of insulin therapy that he was found to be a congenitalluetie with positive blood and spinal Wassermanns and a parietic colloidal gold curve. He had made no progress with metrazol, but did show marked improvement during and for a short time after the course of insulin. Although the improvement in his mental state was not maintained, no detrimental effect was noted on hisluetie process. With this in mind, 17 other cases of general paresis showing no change in mental status following fever and tryparsamide have had insulin or electric therapy during the past four years. These cases comprise approximately 19 per cent of Gowanda's male admissions suffering with paresis.

The technique of insulin therapy employed was the ambulatory or subcoma type.^{1,2} In brief, the fasting patient receives insulin daily at 6:00 a. m. The dosage is commenced at 15 units. The treatment is interrupted three hours later at 9:00 a. m., when the usual breakfast is given, supplemented by additional fruit juice and sugar. The dosage is increased by five units daily until the condition of the patient at the time of termination of the day's treatment is such that he is bordering on insulin coma. When this stage is reached, the dosage is held stationary for succeeding treatments. If, because of atmospheric conditions or a change in the individual's insulin tolerance, he goes into coma before the three-hour interval has elapsed, the treatment for the day is interrupted by 33 1/3 per cent glucose given intravenously. The next day's dose is then lowered by five to 10 units.

The average maximum dose of insulin in this series was 42 units, the range in individual patients being from 20 to 65 units. (Table 1.)

TABLE 1. TREATED BY INSULIN

Patient	Age	Duration of insulin infection in years	Insulin Rx prior to ad- mission	Insulin Rx in hospital	Duration of psychosis	Hospitalized (days) before shock	Days of insulin Rx	Maximum dose-units	Total units of insulin received	Weight gain in lbs.	Condition at termination	Condition to date
CATATONIC												
WC	15	15	—	Neo.	15y	690	55	60	2260	9	Improved	Relapsed
AB	50	27	+	Mal. tryp.	4m	76	30	40	1080	10	Much improved	Discharged, much imp.
JK	53	27	+	Mal. tryp.	4m	54	29	35	810	18	Much improved	Discharged, much imp.
GP	38	u	—	Tryp.	4y	44	60	55	2480	42	Much improved	Paroled, much imp.
SW	44	25	—	Mal.	20d	21	42	60	1985	13	Improved	Paroled
				tryp.		88	60	60	2595	22	Much improved	Returned
PARANOID												
WG	42	20	+	Mal. tryp.	3y+	333	160	45	3950	34	Much improved	Discharged, much imp.
MA	46	20	+	Mal. tryp.	2m+	90	51	40	1185	5	No change	Not improved
TC	33	u	—	Mal. tryp.	1y	129	53	20	770	8	No change	Not improved
AP	42	26	—	Mal. tryp.	2m+	117	57	65	2995	21	No change	Not improved
MANIC												
WW	56	u	+	Mal. tryp.	4m	3	9†	25	185	4	Improved	Discharged improved
WO	45	26	+	Mal. tryp.	1y	37	41	25	875	13	Much improved	Paroled, returned
HG	51	u	—	Mal. tryp.	1y+	120	50	35	786	20	Much improved	Paroled, much improved
DETERIORATION												
CF	43	26	+	Tryp.	3y+	82	20	65	795	—1	No change	Not improved
MM	59	10	+	Mal. tryp.	3y	100	47	30	825	5	No change	Died 2 months after Rx
FB	59	25	+	Mal. tryp.	2m+	77	47	25	485	12	No change	Not improved
Average*	47	23	..		15m	94	54	42	1550	16		

*Exclusive of WC, a congenital case.

†Treatment discontinued on development of acute respiratory infection.

The duration of treatment varied considerably, ranging from nine to 160 days. The mean average for the series is 54 days. It is believed that in the general run of cases approximately 30 days of treatment is sufficient. However, one should not hold to any predetermined length of time, but rather be guided by the therapeutic response. In contrast to the general run of schizophrenics, it is found with the paretics that little is to be gained by continuing treatment beyond the point of optimum remission. It is not believed that further treatment adds to the possibility of future stabilization. Little can be expected by a protracted course of the insulin therapy in cases showing no appreciable response after a month's treatment. In most cases reacting favorably, marked improvement is usually noted in the first two weeks of treatment. Neither the duration of the syphilitic infection nor that of the psychosis appears to offer any indication for duration of treatment.

In cases where the date of luetic infection was known, the time elapsing before psychiatric hospitalization became necessary ranged from 10 to 27 years, with an average of 23 years.

Duration of the actual psychosis prior to admission ranged from 20 days to four years, averaging 15 months (excluding the congenital case). There was an average of 91 days of hospitalization before insulin therapy was instituted. Since malarial therapy was started as a rule within two weeks after admission, it follows that insulin therapy was not started until about two months after the course of fever. This allowed sufficient time for the immediate results of the hyperpyrexia to be noted.

One patient (WW) was commenced on insulin three days after admission. He had previously had a full course of specific therapy. He was greatly disturbed, noisy, restless, overactive, showing marked flight of ideas and extreme distractibility, and was generally expansive. Physically, he had a well-marked luetic aortitis accompanied by moderately advanced cardiac decompensation. Treatment was discontinued at the end of the ninth day when he developed an upper respiratory infection. By this time, his acute psychopathy was so improved that treatment was not resumed following his recovery from the infection. He was shortly paroled and later discharged.

The case just cited is indicative of the few contraindications to the subcoma type insulin. In fact, in the writer's experience, the only real contraindication is intercurrent infection. Many of the other cases showed luetic heart lesions of varying degree. All took the treatment without any aggravation of the organic heart lesions, and several showed marked improvement in symptomatology. It is felt that at least two of the patients would have died had they not had insulin therapy. They showed such an exhausting manic reaction that, had the psychosis not been brought under control, their hearts could not long have stood the added load caused by the hypermania.

Physical improvement was generally marked. There was an average weight gain for the group of 16 pounds. Only one lost weight (CF). He was a deteriorated reaction type with a natural immunity to malaria.

One case (SW) was in such a catatonic, negativistic state on admission that malarial therapy was considered inadvisable because of a generally poor physical condition. Tube feeding had to be used. After three weeks hospitalization with no improvement in his mental or physical status, insulin was commenced. In 42 days he was sufficiently improved to receive a full malarial course. Subsequently, there was a recurrence of psychotic symptoms, and he had a second course of insulin, again with marked improvement. He was paroled for a short time, only to be returned, again actively psychotic. Then he received electric therapy with marked and rapid improvement. In the following five months, he has continued well stabilized.

Another patient (WO) had an initial course of insulin followed by marked improvement and parole from the hospital. He returned to his usual work. There, he became involved in a sabotage hearing as a witness. This precipitated another acute psychotic episode. He was returned to the hospital in an extremely excitable manic state. He was under marked increase in psychomotor tension, and showed extreme flight of ideas in an expansive grandiose fashion. He was assaultive and destructive when his wishes were not acceded to, necessitating restraint. His pulse ran upward of 120 per minute. He had a marked aortitis. He constantly demanded digitalis, having been taking tremendous doses with no benefit

prior to his return from parole. He showed prodromal signs of a terminal exhaustion state. Electric shock was promptly instituted. He was calmer after the first treatment. By the time he had completed a course of 11 treatments, 10 with grand mal responses, he was up and about, entering into the ward activities, with his cardiac status returned to normal. For several weeks following, he showed an irritable coloring which was gradually subsiding. His transfer to the outpatient department is expected again in the near future.

TABLE 2. TREATED BY ELECTRIC SHOCK

Reaction type	Patient	Age in years	Duration of infection in years	Luetic Rx prior to admission	Luetic Rx in hospital	Duration of psychosis, months	Days hospitalized prior to Rx	Convulsions	Grand mal	Petit mal	Condition at termination	Condition to date
Cata-tonic	*SW	44	25	—	Mal. try.	2/3	270	6	6	0	improved	Paroled
Cata-tonic	LC	42	20	—	Mal. try.	48	50	7	5	2	improved	Much improved
Cata-tonic	BR	47	6	+	Mal. try.	1	34	8	5	3	improved	Much improved
Manic	*WO	45	26	+	Mal. try.	12+	159	11	10	1	improved	Much improved
Deteriorated	TA	60	u	—	Mal. try.	2+	46	4	1	3	No change	Not improved

*Previously had insulin. See Table 1.

Electric shock has been given in only five cases thus far. (Table 2.) There was no change from the usual technique. The average number of treatments was seven. All five cases had had malarial therapy and were well established on tryparsamide. Two, already mentioned, had previously had courses of insulin followed by relapses with very disturbed psychotic states. Four of the five were much improved at termination of treatment, with total inactivation of psychotic symptoms. Three are already transferred to the outpatient department. The fourth is expected to leave the hospital shortly.

The fifth case (TA) was one showing general signs of organic deterioration. He was highly refractory to electric shock, not having a grand mal seizure until he had a dosage of 575 milliamperes at .7 of a second. Treatment was not carried beyond this point, as it was

believed no therapeutic response could be expected, and aggravation of the existing state was feared.

In none of the cases treated with electric shock were any indications of aggravation of the central nervous system luetic processes or other untoward effects noted.

In consideration of the reaction type of the total of 18 cases, seven were adjudged catatonic, four paranoid, three expansive manias and four organic deterioration. Those showing catatonic and manic pictures invariably showed a favorable response to therapy, either subcoma insulin or electric shock. Of the four considered paranoid, only one showed improvement. After a year in the outpatient department, he was discharged as much improved, showing no evidence of active psychopathy.

The four patients typed as deterioration showed no improvement in their mental status, three following insulin and one after electric shock. However, some improvement in the physical state was noted in all four. One died two months after receiving insulin. Insofar as could be determined, his death in no way had any relationship to the insulin therapy.

The number of cases in the series is too small to make any definite evaluation of the relative merits of subcoma insulin and electricity. Discounting the paresis, the indications for one or the other might be considered the same as generally accepted today for any particular psychiatric syndrome. More rapid and spectacular results may be obtained with electric shock, especially in paretics showing acutely disturbed states; and it has been demonstrated as preventing exhaustion states. One should keep in mind, however, the transitory organic symptoms seen not infrequently in the general application of electric shock, and not indiscriminately apply this therapy to paretics who already show signs of organic insult for fear of extending or aggravating the pathology.

On the other hand, there are no known contraindications to subcoma insulin unless it be an intercurrent infectious disease. The insulin may not be so rapid in controlling the psychotic symptoms, but the weight gain and general physical build-up are factors to be considered in favor of its use.

The results of this series of cases indicates the therapeutic applicability of insulin and electric therapy in psychosis with syphilitic meningo-encephalitis. The sphere of greatest use would appear to be in catatonic and manic reactions which continue after adequate specific therapy has been given. Paranoid states did not show too favorable response, but final conclusions cannot be drawn from only four cases of this type treated. Patients showing evidence of progressive organic deterioration would appear to have nothing to gain by any similar therapy except perhaps the general physical build-up usually brought about by insulin. It is questionable if this would be of sufficient moment to warrant the treatment.

It is possible that some of the treated cases would have recovered from their acute mental states in due time without the insulin or electric therapy. Yet it is equally certain that a certain number at least would have continued in their psychotic states indefinitely. In all cases, the difficulties in the management of the patients were reduced; and in those who responded favorably, the period of hospitalization was definitely shortened. Accordingly, the continued use of insulin and electric therapy in general paresis, and especially in catatonic and manic reaction types, is held to be indicated.

SUMMARY

1. Shock therapy has been given to a series of 18 patients diagnosed psychosis with syphilitic meningo-encephalitis who showed no improvement in mental status following malarial therapy and the institution of tryparsamide. Of the 18 cases, 13 received insulin by the ambulatory or subcoma technique, three electric shock and two ambulatory insulin followed by electric shock.

2. A summary of the ambulatory insulin technique is presented.

3. Rationale of the application of insulin and electric therapy to paresis is considered on a basis of psychotic reaction types. Seven cases of the group were considered as showing catatonic syndromes, four paranoid, three expansive manic and four generalized deterioration.

4. No aggravation of existing central nervous system pathology was noted, nor were complications of any sort experienced.

5. The relative merits of insulin and electric shock are considered.

6. Results were highly favorable in cases presenting manic expansive and catatonic reactions. Continued application of these therapies in such cases would appear indicated.

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A DREAM UNDER GENERAL ANESTHESIA*

Studies in Ego-Cathexis

BY PAUL FEDERN, M. D.

Interpretation of dreams seeks the unconscious, its material and its mechanisms. Yet the dream itself is consciously experienced; also, there is no doubt whatever that the dreamer himself, i. e., his ego, is dreaming. While, during sleep, there is no ego existing, the ego returns from nonexistence because awakened by the manifest dream. When in this way recathected, the dreaming ego can react to the dream, the ego can enjoy, can fear, can dislike and doubt the dream. The ego may look at the dream as on a movie or a play, or in other dreams the ego itself plays a part on the dream stage. Therefore, dream interpretation is one part of complete dream understanding, and accurate knowledge about the dream ego is the other part. Interpretation gains in certainty and value if ego contributions to the dream can be separated from the productions of dream work.

The first hint in this direction was made by Freud himself when he said that dream anxiety was the reaction of the ego to an unconscious infantile wish which became unbearable to the adult ego; this conception links the investigation of ego reactions to the problem of neurotic anxiety. Dreams are usually used in psychoanalytical case histories to illustrate that the patient's ego has changed during, and through, psychoanalysis. Marguerite Combes, interested in the problem of the ego in dreams, wrote a book on "Dream and Personality,"¹ rich in observations, but psychoanalytically poor in understanding. Dr. French came the nearest to the writer's interests by investigating successive dreams in regard to ego attitudes. Yet no study was given by psychoanalysis to phenomenological data in respect to the degree of awakening of the ego and to specific qualities and quantities of the dreaming ego's recathexis.

Loss of ego-cathexis initiates sleep; recathexis initiates dream, yet too much recathexis quickly makes dream and sleep end. Very distinctly, the mental and the somatic ego are different in regard

*Read in part before the convention of the American Psychoanalytic Association, Detroit, May, 1943.

to their recathexes; that the ego consciously consists of the bodily and mental ego-feeling is one of the important phenomenological aspects of psychosomasis.

Every morning on awakening, Freud's theory of the ego, emerging out from the id can be verified; therefore, the writer has introduced a new word fitting the new knowledge: *orthriogenesis*.* Orthriogenesis is the rapid repetition of ontogenesis of the ego, and presupposes that ontogenesis and phylogenesis also exist in respect to the ego. Orthriogenesis of the dream-ego is frequently incomplete; the dream-ego awakens in an infantile state. Incomplete orthriogenesis easily explains many infantile and atavistic traits of dreams.

The subject of this paper is a personal experience of the writer, his own dream under general anesthesia and his own analysis of it. To avoid repeated, awkward phraseology, this dream will be reported and discussed here, contrary to general contemporary practice, in the first person—according to the precedent set long ago by Freud in similar analyses.

I was occupied with observation and theory bearing on the phenomenology of the dream when I had the chance to come to the United States and, as a minor consequence of crossing the Atlantic, had to change from European to American dentistry. In this field, American radicalism is so deeply rooted that for the first time in my life I had to undergo a general anesthesia—with nitrous oxide. The dream during this anesthesia is both the subject of discussion here and the starting point of further investigation of the dream ego.

When I entered the operating room and sat down in the chair, I thought that it was a good thing to have to do with kind and courteous nurses and assistants who spoke softly and touched gently and warned me before they did anything to my helpless physical self—such treatment encourages an obedient attitude, which facilitates narcosis. It might be well to investigate how greatly the quantity of anesthetic necessary, the course of the anesthesia and the after-effects are influenced by obedience and confidence beforehand. There was some conversation in the operating room; there had

*“*Orthrion*” means “the morning” as an event in time, while “*cos*” means “the morning” as a visual phenomenon.

been a misunderstanding over my message to my own dentist that it would not be necessary for him to attend, however he was not present; but my tranquil state of mind was not impaired; and the surgeon's words did not enter into the ensuing delirium.

I disliked having the lump of gum thrust into my mouth but was reconciled when I felt it was not hard but elastic. At this moment, I had my last thought before the anesthetic took effect, a thought—without any fear—that I might die and that I should use my last moments to consider intensely and philosophically the end of this life and to make an important decision of some sort in regard to accomplishing something in case I should continue to live. Then I felt the strange but rather sweet taste of the gas, a slight dizziness—and I vanished as a personality. There was no disagreeable feeling while inhaling the anesthetic, no respiratory difficulty, no optic disturbances whatever. I fell asleep suddenly, as I had many years ago, and without any feeling of faintness or realization of losing consciousness. Consciousness was lost so quickly I could observe no details.

The dream did not begin immediately after the last conscious thoughts. There was an interval in which my ego lost all its mental charge—its cathexis (*Besetzung*)—and was extinguished. A short time afterward mental life returned. I did not know that I was dreaming; I had not forgotten my antecedent life; I felt myself with my own character and name. However, I lived in completely changed surroundings and I possessed a strength of will power, quickness and certainty of decision, intensity of action, the like of which I have never experienced before either awake or dreaming.

I was the chief military commander and the chief statesman of great territories, and I put in order one province after the other. In the dream, I knew which country, far in the east, it was. But in remembering I cannot decide whether it was China or Greece. These provinces had straight-lined frontiers like the states of the United States of America. But the country was not America.

The time I seemed to live through while I was strenuously endeavoring to reform all these countries was very long; it appeared to last for half a year. I accomplished my task with continuous strain and tension. Everything was decided in a hurry and carried through quickly. I was very severe with myself but at the same

time fully and continuously contented with the way I performed my duties. Never in my life, have I felt such happiness or satisfaction with my personality and with my work. It was the strongest "feeling of oneself" and the greatest enjoyment of one's own self one can imagine. The singular events of the dream followed each other with enormous speed, all actions were carried out with perfection, one after the other, and in complete order and very quickly, since it seemed necessary to act as quickly as possible during the whole dream. Life was a glorious and victorious fight without any conceit or show; I distinctly felt that I never failed to follow the motto: Do what you have to do.

Suddenly the glory ceased. One of the surgeons spoke to me. Immediately I tried to remember all the details but was aware of only the skeleton of the dream.* In similar investigations, the patient should be left to awaken spontaneously and should not hear conversation around him. The awakening by another person may change a dream, and conversation hinders remembering. Therefore, complete interpretation is impossible, because details are forgotten.

The principle of wish-fulfillment is overt. Everything is in full contrast to reality. In reality, I was sitting incapable of moving and—as I mentioned—my attitude was particularly obedient and without any resistance. In the dream, I was acting and rushing from state to state, and nothing could withstand me. Instead of obeying the nurses like a well-behaved child, the dream made me a very masculine superman. Thus, I compensated for being fettered and for the loss of manhood and strength which was sustained symbolically, in having a number of teeth taken away. I cannot imagine anything more directly opposed to activity than the situation of a patient in a dentist's chair. Equally noticeable, was the contrast between my rôle in the dream and the reality of my actual life. An exile can but watch contemporary events and criticize what happens, but he cannot defend himself, his family or his interests. Moreover, although my interest in politics is in real life intense, it is merely scientific and theoretical. I would neither enjoy a high

*Due credit should be given here to Harry M. Seldin, D. D. S., who was present at the administration of the anesthetic and who suggested that I should record any dream I might have.

position nor believe myself fitted for it. All these matters were totally reversed in my dream. Not only did I fight for my ideals, I myself was changed into my own ideal. It was no military fight—although I was chief of armies; my personality conquered by its own strength and by the height of my position.

The whole dream was somewhat parallel to a dreamed monologue in Mickiewicz's "*Dziady*" ("Festival for the Dead"). The hero there dreamed in a postepileptic state of unconsciousness that he argued with God, asked from God omnipotence by strength of thought and by no other weapons, since God did not yield to his wishes, he calls him the world's "czar." It is psychologically interesting that the poet allowed his hero, only in the state of a deep unconsciousness, to develop his sacrilegious dream. My own dream is highly aimed but remained in the limits of the earth.*

I must go back to my childhood to find daydreams which correspond to this anesthesia dream. At the age of 10, I remember, I read with enthusiasm a book for boys, which, as I recall it, was named "Liu-Pa-Yu;" it dealt with a Chinese story and I became very interested in the fate of the Chinese and wanted to go to the Orient myself and become Emperor of China. For a long time, I was teased about this.

The other possibility, that the country dreamed of was Greece, has two sources; at the age of 13 or 14 I deeply resented the defeat of Demosthenes and the victory of the Macedonians over Greece. The second source is more recent. In discussions, I have frequently demonstrated the parallelism between ancient history and recent events; and made the forecast that another European-Asiatic empire might be attempted by the militarily progressive and politically aggressive northern tribe of the Germans. In the dream, I myself was the helper of all these countries. By locating my campaigns in Greece, I, myself, and not the Germans fulfilled my prophecies. (The dream happened long before the disaster of Greece.) The wish-fulfillment by power, freedom, perfection and prophecy culminated in the satisfaction of which I dreamed of

*Since this paper was read four reliable persons have written to me about dreams under anesthesia, which contained cosmic experiences of the ego, combined with religious, ecstatic contact with God, the Creator.

using my faculties for the best of all; an ideal once nourished but of which fulfillment was denied for many years.

One can expect to find the basic mechanisms in dream-production during general anesthesia will not differ from those in dream-production during physiological sleep, but that there will be some psychological differences as typical consequences of the physiological differences.

A person under full anesthesia does not react to physical or mental stimulation in such a fashion as to awaken either immediately or slowly in the same way as from physiological sleep. By extraordinary stimulation reflectory disturbances occur, one can even die but not awaken.

Dreams are influenced and may even be started by stimulation; stimulation derives from external or internal irritation or from internal mental sources. I mention the possibility that many laymen and metapsychic authors may be correct and that psychic stimuli from other individuals might also influence the dreamer's mind. That is, there might be a hypnotic rapport established between the patient in anesthesia and the surgeon, even without the latter's intention, before putting the patient into sleep.

In any report of mental productions before, during and after general anesthesia, it is important to determine what depth of unconsciousness was established. During the beginning and the ending of ordinary sleep, even slight stimuli affect the sleeper; during the depth of sleep external stimuli have to be strong or have to continue for some time, gaining efficiency through accumulation. Therefore, during deep physiological sleep, the mental sources of dreams are the main ones. My dream happened in deepest sleep and not in awakening.

The main, manifest dream events can be traced to stimuli and to changes of the mental state brought about through anesthesia.

I am certain of four stimuli and see a possible fifth. As I have already said, my last conscious thought was that I must consider seriously my future plans. This thought created—like an autosuggestion—my heroic course during the dream. In this regard, the dream recalls the many cases of individuals who have been able to direct their dreams during the day or evening. I would have dreamed otherwise if I had thought of some pupil or of my grand-

son or if I had been resistant or fearful in regard to anesthesia; in none of these cases could I have produced a dream shaped like Caesar's *veni, vidi, vici*.

While the last conscious thought directed the whole dream, a last perception determined the choice of the field in which the dream played—and more especially its form. After my awakening, the straight-lined frontiers remained as a clear visual remembrance. One might think that they are sufficiently explained by the frontiers between the states of the United States. Yet I know that while the characteristics of the map of North America in my dream were provoked, the stimulus occurred before losing consciousness. When I looked to my right side, I saw the illuminated and magnified X-ray pictures of my teeth. The pictures were quadrangular, they were hanging side by side, and I thought that they demonstrated which teeth had to be operated on. My last visual interest was given to them. They represented what had to be changed.

My identification with the surgeon was another, the third, recent source of my dream. What the surgeon did in physical reality, I accompanied with parallel deeds in the world of my dream. This world of my own was not limited, either by judgment or by reality-tests; both are lacking in dreams.

This identification expressed itself by the use which I made of the fourth stimulus for my dream, the operation itself. In my dream, one province was put in order after the other; and I remember that I hurried from one to the next. The quadrangularity of the frontiers was due to the X-ray pictures of my teeth. Repetition of an element is rather a rare dream phenomenon; usually it corresponds to a repetition of the fact represented by the element; it is probable that each extraction was transformed by the dream-work (i. e., the whole unconscious mental process that builds up the manifest dream out of its latent sources) into one after the other of my separate political and military activities; I also was repairing each ruined country to a sound and good state. The main mechanism in dream-work is condensation. We are not astonished to see many influences condensed into the repeated scene.

I pass over some deeper associations and interpretations* and may only add as a fifth source of the dream my thought when I decided to have my teeth removed. I intended a full and energetic repair for good; and so I "repaired" my provinces in my dreams.

Our interest in finding typical or exceptional features which are due to the state of anesthesia is to some extent satisfied. We have found identification with the surgeon, influence of the last conscious thoughts and the last sensory perceptions, influence of the more general disposition of mind of the week before, and influence of the acts of extraction.

By confronting these findings with the report of the dream, one might admit that there is some probability in this explanation. However, I myself who have lived through this dream am not satisfied by the interpretation, because this analysis does not render justice to the sensational singularities of the dream which I have described, to the enormous delight I had, to the great speed of the happenings and to the tremendous strength of my ego-feeling. My explanation up to this point has been incomplete because only the usual means of psychoanalytical interpretation have been used. Only the dream-contents were dealt with and not the peculiar personality-state² during the dream. This state will now be examined and explained.

During all periods of life, pathology of the ego plays an important part in all diseases. There are many pathological disturbances of ego-feeling, from lack of "presence of mind" to estrangement and depersonalization, from hysterical weakness of the ego to true double personality, and from schizoid exaggeration of the ego-feeling to schizophrenic diminution and regression to infantile states.

Normally, our bodily ego remains more or less the same, containing our whole body with its sensory and motor-organs; but our mental ego changes continuously, depending on which functions, thoughts and perceptions are simultaneously conscious. The mental ego feels itself to be within the bodily ego.

*My military service 50 years ago, for example, was for two periods of half a year each; "Caesar" refers specifically to a peculiar situation of my elder brother 60 years ago.

When by sleep, or fainting, or similar unconscious states, one's ego-feeling becomes interrupted and disappears, the contiguity with the ego-feeling before interruption is reestablished after restoration. Therefore, the "ego" can be defined as the "lasting or (after interruption) reestablished continuity of the individual's unity in regard to space, time and causality." The "ego" defined as subject feels this "ego" as object.

These basic remarks on the ego also bear on the ego during sleep and in dreaming. However the ego-state during this dream in general anesthesia was very different from that in usual dreaming.

At the moment when consciousness was lost, the ego fully disappeared; there was neither bodily nor mental ego-feeling. When the dream started, the ego reappeared suddenly and lasted with the unique intensity mentioned throughout the whole dream. But it was only a mental ego, with no trace of the bodily ego. Both facts, the sudden disappearance of the ego and the intensity of the re-awakened mental ego, are produced by the anesthesia. They do not belong to normal falling asleep and to ordinary dreaming.

In normal sleep, the mental ego awakens as little as possible, and the bodily ego does not awaken at all. When the bodily ego awakens or when the mental ego becomes stronger—with some of his critical and reasoning functions—further sleep soon becomes impossible.

By remembering where and how one was standing, sitting, lying and moving, one can tell to what extent the bodily ego was present in some dream scenes. Usually, the dream work succeeds in silencing emotional function and volition. Whenever parts of the body are clearly perceived, this is due to emotion or to an intended voluntary action which has penetrated into this part of the dream. Therefore, a dream like the one reported could not have been dreamed in normal sleep; the dreamer would have awakened before the mental ego could get such strength. From epileptic states and from experiments with mescaline, ego-sensations of analogous intensity are reported.

Freud has stated as a principle that dreaming protects the continuation of sleep by sacrificing its completeness. The aim of conserving sleep is frustrated when awakening-forces become so strong that too much of the ego becomes reestablished. Protec-

tion of sleep is made by external helps, by darkness, silence, and covering the body, by the (physiological) help of closing the eyes, and by two psychosomatic means—the one, the increase of the “protection against stimulation,” the “*Reizschutz*,” the other, the emptying of the ego itself of its full cathexis. There is a close connection between fatigue and *Reizschutz* on one hand, between sleepiness and ego-cathexis on the other. One can be very sleepy without being fatigued except by the very effort to overcome sleepiness. The increased *Reizschutz* in efferent and, in afferent stimulation, explains the main quality of fatigue, the feeling of strain in continuing any activity or in maintaining any active or passive attention.

A high degree of mental fatigue before going to sleep shows by the pace of the manifest dream. Dream pictures change slowly; sometimes one and the same scenery remains during a whole dream which, in contradistinction to this dream in anesthesia, proceeds very slowly. Slow-paced dreaming is, therefore, a symptom of psychosomatic fatigue which has not been repaired by sleep. Sleepiness can be described as a sense of difficulty in maintaining ego-cathexis.

Strong external stimuli or exciting ideas are required to ease the strain of maintaining one's ego. One can distinctly feel a moment of demarcation between states of fatigue and sleepiness alone. In undergoing the anesthesia described, no fatigue and no sleepiness whatever were felt.

The disappearance of the ego in sleep is so much of an imposing phenomenon that, among analysts, Jekels attributes sleep to the manifestations of the death instinct. Doubtless, sleep is an act of regression; but although death instinct tends toward regression, not every regression proves to be the working of the death instinct. Sleep makes the individual return bioanalytically to his mother's womb; this is a symbol of death but factually is a renewal of life; when a dream interrupts sleep it recathects the ego as it is found in an early state of development. Jekels, in his paper, quotes Kant's opinion that only dreaming saves the sleeper from death.

Yet, sleep has its great economical importance, mentally and physically. While the waking state exhausts all cathexes, sleep restores all potential and factual energies in all psychosomatic fields.

Sleep is every night's rejuvenation, and more so without dreams. In a discussion, Dr. Jekels and the writer agreed in the view that, in sleep, symptoms and paralyses due to the death instinct can become more prominent than during the waking state, because life as well, by returning to an early infantile or even prenatal state, gains instinctual intensity. There is no doubt that, instinctually, aggression and sexuality regain strength during the sleep; both create dreams, disturbing and protecting the sleep. It might even be that sleeping life cannot be damaged by intensified death instinct because damage threatened by death is directed against the active energetic life of waking, not against the reconstructive, quiet life of sleep. This would be parallel to the protection of sleep by loss of the ego's cathexis.

Many conflicts, wishes, regrets and fears, many interesting impressions, retain some cathexis when sleep comes. They continue to stimulate—but the ego has no boundary sufficiently cathected to react. Paradoxically, nothing can happen to the ego because of its absence, except that stimuli create dream work, and this reawakens the ego. In fact, the ego under such conditions would be very vulnerable because it would lack reason, experience, anticipation and memory. We know an ego of this sort; it is that of the hypnotized person; of course, it is liable to any suggestion.

Dreams arise from the need or habit of the mental apparatus—even in a state where it lacks nearly all cathexis—of dealing with the many mental and few physical, disturbers of sleep; the uncathetized state turns by dreaming into a partially cathected one. This is the dream-ego, awakened merely to watch the dream and to live it through.

It is worth while to inquire exactly to what degree the dreaming ego is bound to be reestablished. The answer is that the dream-ego must be able to recognize—vaguely or clearly—the objects and scenes of the manifest dream. This minimum is reached but not exceeded by successful and perfected dreaming in which all emotion is transformed into dream-scenes.

Objects and events in the manifest dream are not only recognized, they are seen, are each lived through in reality. This reality is impressed on the dreaming ego; any less superficially cathected ego would not accept it. Yet dream reality needs further explanation.

The basic characteristic of dream and of psychosis hallucination is untrue reality, a reality which does not exist for the individual in health or when awake.

Reality and visuality are caused in infancy, in psychosis and in the dream by stimulation of the ego from outside. Ontogenetically arising from a state of nonexistence through an embryonic and infant period, the individual becomes accustomed to attribute reality to everything around the ego boundaries. In dreams, the infant ego is awakened by a world of ideas and events made by the dream work; all this is reality because of the dream-ego which is awakened inside this world of picture thoughts. The ego, while dreaming, may not reach the period of life from which the manifest dream pictures are taken. In scenes of later life, the dream-ego may be younger or older than the period represented. Neither is the dream-ego's level of instincts equal and up to conscious age.

The more a dream-ego is recathected, the more it participates in the dream facts; and, because it feels its weakness, such a dream-ego resembles the depersonalized ego.

The dream-ego falls short of any activity; even when one has to perform something in a dream, such a task is not felt either as a wanted and voluntary or as a refuted and unwillingly accepted one; everything is done as a matter of fact, with the feeling of imposed necessity which is analogous to the imposed reality of the dream itself.

The dream-ego is poorly cathected; far from being resistant or permanent, it is unstable; it is passively exposed to the dream and defenselessly undergoing it; as it is lacking in ego-functions like reasoning, volition, judgment and use of memories, even any attempt at understanding is immediately abandoned. One of the most important and least emphasized components of the dream-ego's weakness is that one's mind is only partially awakened while the body continues to sleep, although this rule has exceptions.² The dream-ego also deserves the designation of weakness because its mental cathexis is passive.

Although dreams in anesthesia are made by the same mechanisms as all dreams; in successful and deep toxic anesthesia, conditions are so different from normal sleep that important differences of dream-structure could be expected. But the findings themselves could not be anticipated.

Complete anesthesia allows the dream-ego to become strongly cathected, because no danger exists of being awakened, as there would be if, in normal sleep, the manifest dream exerted too strong a stimulation on the ego, which is feebly cathected and passively exposed. In anesthesia, the dream has lost its function of protecting sleep, since this function has become quite superfluous. Yet habitually, in many anesthesia dreams, mechanisms of disguise, symbol-formation and displacement are used to satisfy the wish-fulfillment tendency of the id and of the ego. The dream investigated in this paper was exceptionally undisguised and clear, notwithstanding its extreme wish-fulfillment.

The astonishing features center in the excessive recathexis of the mental ego without any feeling of the body which can be recollected—without any recathexis of the bodily ego. In normal dreams, bodily ego-feeling carries awakening with itself; since bodily ego-feeling in ordinary dreaming meets with emotion or volition of the mental ego; the mental ego cannot become too wakeful, else the body awakes with the mind, and soon the dream is ending. To continue sleep, the mental ego loses, as quickly as possible, any increased cathexis and returns to an uncatheted state. But, in anesthesia, no danger of awakening threatens sleep; phenomenologically, that means that no announcement of too strong stimulation compels the dream-ego to withdraw any recathexis as it does during usual dreaming. On the other hand, no sleep-reflex becomes stimulated by feelings of fatigue, because neither fatigue nor sleepiness are felt in general anesthesia. For these reasons, the recatheted mental ego can remain recatheted even when it reaches extraordinary strength of cathexis, as happened in the dream investigated here.

One of the unexpected features of this dream was that the super-ego was recatheted simultaneously with the ego. This cannot happen in any dream during ordinary sleep, without awakening. The abnormal intensity of ego-recathexis also explains the clearness and rationality, which contrast with the usual illogical products of dream-formation. In this case of anesthesia, the manifest dream was like a chapter of a normal biography, full of Caesarean success and thanks to the coawakened super-ego without Caesarean excesses. It is very probable that remembrances of Caesar's hurry in

carrying his triumphs from province to province helped to form the dream. Many dreams in literature, in dream-research as well as in fiction and in biographies and autobiographies, report vivid and long-lasting, adventurous and glorious deeds; yet the dream-ego undergoes them passively, not with "conscious" mental activity, volition and emotion. It might be that, like anesthesia, abnormal fatigue or other causes might also prevent reawakening of the body and permit, therefore, increased mental ego-cathexis. However, clear and rational dreams like the one investigated remind us of the fact that it is the conflict between ego, id and superego, wish-fulfillment and fear, primary and secondary processes, awakening and sleep-continuing, organic stimulation and stimulus protection, instinctual stimulation and resistances, mental stimulation and opposed stimuli, which creates all irrational pictures in dreaming—even dreams' chimerical monstrosities. It is mainly because of the incompatibility between conscious and unconscious processes whenever they meet on mutual ground—and because in sleep the ego is helpless against intruding unconscious processes—that the dream becomes such a battleground. Yet if the mental ego is abnormally actively cathected, this cathexis works as an anti-cathexis against unconscious processes; the ego reacts by a dream, but this dream shows the main qualities of the normal ego, volition, clearness, rationality. Such a strongly cathected mental ego has its boundaries well guarded against instinctual urges as well as against irrationalities coming from the unconscious. The mental ego reacts with its own libidinous means, with object libido as well as with narcissism. Therefore, in this dream, the objects as well as the ego feeling were abnormally strong.

The dream-ego was extremely happy because narcissism as well as object libido were fully satisfied. Like an experiment, the dream shows that happiness is a corollary of ego-cathexis. The dream was not a manifestation of mania, because in this mental disease the super-ego loses its cathexis. Psychiatrically, the diagnosis of a state of amentia would be justified, if one wanted to judge an artificial, narcissistic inebriation like any waking pathological state.

One finds regularly that a dream with vivid dream-scenes shows little intensity of the ego-representation and feeble cathexis of the dream-ego; in other dreams, the dreamer's own personality is more

awakened, while the dream-scenery is less vivid. This complementary relation seems to be due to some economy in the whole awakening-process of dreaming. Another explanation would offer an alternative between a narcissistic or an object-libidinous wish of which the fulfillment is effected by the manifest dream. In the anesthesia dream both ego, including super-ego, and the dream-events were exceedingly vivid, yet little memory remained of the scenery and of its visual intensity. Exceedingly strong was the reality-feeling of the dream events, and the personality-feeling was exceedingly strong. It is out of the question to decide whether, biologically, cathexis is increased; one has to be satisfied to ascertain the phenomenological increase of all sensations which correspond to cathexis-increase. Undoubtedly, there was not a sleeping and scarcely awakened ego in this dream but a mental ego with highly-increased vigilance, without any concomitancy of any bodily ego-cathexis.

The flooding of the ego by recathexis is explained by the fact that it could not awaken as long as anesthesia continued. Yet this impossibility does not explain the fact itself. One might as well have expected a paralysis of the mental ego as of all sensory and motor functions. The easiest explanation of such, and of analogous, problems is to assume a specific affinity of the drug to the apparatus which are paralyzed.

Psychologically, there are two possible explanations. The one is that deep unconsciousness reveals the degree of the narcissism of the dreamer. This explanation will be tested when many psycho-analyzed individuals who have undergone general anesthesia are asked to report their anesthesia dream experiences. The reported case shows a great amount of narcissistic cathexis; but this dream is without value in regard to this question because of the dreamer's intense interest in ego-psychology. Many scientifically engrossed dreamers unconsciously direct their dreaming to their dominating problems. Yet regardless of whether the dreamer was inclined toward the ego-cathexis, the resulting dream yielded the proof of the prevalence of mental ego-cathexis compared with bodily ego-cathexis. If the ego had been reawakened by the direct influence of the anesthetic, this effect would have occurred from the beginning; but this did not happen. The mental ego was intensely

recathected through the manifest dream which was provoked by the strong stimuli set by the operation. The effects of these stimuli were distinct, although, through anesthesia, pain by, and localization of, the stimuli were absolutely eliminated. The writer is inclined to assume that stimulation influenced the mental ego so strongly because the stimuli did not consume their energies in producing pain and sensory localization. This lack of pain and localization of stimuli is due to the paralyzing effect of the anesthetic on all sensory and motor organs, i. e., the body; because no body was felt, no body-ego was recathected.

Further, the conclusion must be drawn that the body-ego fulfills the task of protecting the mental ego from too intense stimulation; the body-ego contains the whole "*Reizschutz*." It is easily understood that stimuli, when it is recognized whence they come and where they work, are less able to accumulate and to be condensed up to the point of disturbing or awakening the mental ego. Therefore, the fading of the bodily ego is the main reason for the development of dreams in general anesthesia and especially of dreams due to body stimuli. It is less a paradox than an amazing discovery that, with the full paralysis of the sensory organs, protection against stimuli and protection of sleep are also paralyzed. This is the reason why the stimuli could awaken the mental ego alone and could awaken it so intensely and could exert such an intense influence on the dream itself.

There are two more exceptional features of the dream which are also to some extent explained by the intensity of the mental ego-cathexis, the abnormal experience of speed and of length of time lived through. Freud says that the "unconscious" is without the category of time, that time-experience is reserved to conscious and preconscious mental life. Yet we know that there exists a "head-watch" by which the time is judged even during sleep; one can attribute this to preconscious functioning. By body-process periodicity, the head-watch gains an objective judgment of the time. Whether one feels a period of time subjectively as long or short depends on the changes of object and ego-cathexis during this period and on the pleasure or dullness felt because of the changes. Occupation with many interesting tasks and pleasurable thoughts makes time speed and makes its remembrance cover a long period in con-

trast to the objective judgment of time by the body ego. The enormous intensity of mental experiences and deeds combined, with the lack of any interference of the body ego, created the extraordinary impression of extension of time in the anesthesia dream.

The features mentioned in this dream must be checked by many investigations of dreamers of different ages and different libidinous character-structure, with different drugs used for anesthesia, with different attitudes in regard to the operations, with different kinds of operations, without operations, and with spontaneous and artificial awakenings. The usual characters of their dreams should also be known. Investigations of this kind will contribute to our knowledge of the normal and pathological cathectical reactions of the ego and of its functions.

In itself, this topic is important enough. However, it provides one more argument for the need to investigate ego-cathexes in different psychoses. Many psychiatrists have recognized the analogy between the mental production of the schizophrenic and of the dreamer. The main similarity lies in the identity of the falsified reality conception. Thought has reality in dreams as well as in schizophrenia, in the latter because some ego-boundaries have lost their normal cathexis, in the dream because the ego is awakened from non-existence into the perceptions of the manifest dream. In both cases, reality is due to the fact that perceptions stimulate the ego—coming from outside to its boundaries, while mere thoughts are inside the ego boundaries and included within the cathexis unity that is the ego. Furthermore, the schizophrenic ego suffers from the same feebleness of cathexis as the dream-ego in usual sleep. By shock treatment, the feebly cathected schizophrenic ego becomes for some time fully cathected, reawakened. If we learn, by use of helpful mental treatment, or by other means, how to make re-cathexis persevere, schizophrenia will be healed; for all psychosis bears primarily on ego-cathexis.

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A PARANOID SYNDROME IN A 12-YEAR-OLD BOY---A CONTRIBUTION TO THE QUESTION OF "PARANOIA"

BY VALERIE HANDZEL, M. D.

The questions of where to classify paranoid symptoms and of whether there is a symptom complex which can be considered a true disease entity have had widely varying answers during recent decades.

Kraepelin, the first great systematist of psychiatry, approached the problem from a purely descriptive point of view and defined paranoia as such a disease entity, characterized by systematized delusions based on inner causes but with preservation of clarity in thinking and acting and with absence of hallucinations, and distinguished from "paraphrenia" which—with hallucinations and more extravagant delusions—was closer to dementia præcox in symptomatology but distinguished from that disorder by lack of the characteristic personality disorganization. Bleuler, on the contrary, doubted whether paranoia was a disease entity, viewed it as made possible by a "constitutional predisposition and a chain of Freud's predisposing occurrences"—and held it must be precipitated by a psychic trauma. He viewed the predisposition as psychological, and his skepticism as to the existence of a disease entity approaches current concepts that paranoia is a syndrome (Charles H. Miller and others).

Wernicke, Gaupp, Wilmans and Friedman added to the Kraepelin and Bleuler concepts their own descriptions of mild cases, "abortive" forms of paranoia. All these and other German authors agreed in stressing the view that the delusional systems of paranoia could be derived from abnormal character dispositions, and Heilbronner even used the expression "*characterogen*" to indicate his view of the etiology—in the good-natured, modest, highly-cultured and educated, meticulously conscientious, ambitious, brooding, nervous and hypersensitive "paranoid personality." The general trend of thought here was that disagreeable life experiences and mental exhaustion led to paranoid symptom formation in such characters.

It was Kretschmer, however, who took a decisive step in endeavoring to derive paranoid symptomatology from personality de-

velopment. He considered the symptom complex of paranoia to be a disease entity developing in the "sensitive character," which possessed extreme shyness, seclusiveness, deep and refined emotional feelings, high ethical standards, and general interests and cultural strivings higher than the average. He considered the typical reaction of this character to harmful life experiences to be retention of affect with consequent intrapsychic tension; he believed there was usually a seriously unfavorable hereditary background and an asthenic constitution. Kretschmer held the development of the disease to be essentially psychogenic, and, although not subscribing to Freudian views, did not deny that sexual-ethical problems were the basis of the intrapsychic conflicts in his "sensitive" characters. He describes one case—which is worth mentioning here because it has features similar to some observed at Rockland State Hospital—in which he correlates excessive masturbation and the formation of delusions of reference.

In general, these authors considered that the paranoid symptom complex developed from a typical character disposition and specific life experiences—that the highly-developed conscience of the sensitive personality could not bear the urge of its own sexual drives and that condemnation of these was projected outward on other personalities.

Freud and his followers, in particular Jung and Ferenczi, emphasized the essential importance of sex conflicts in the mechanisms underlying paranoia. The Freudian view that paranoia is a defense against a homosexual wish is too well known to require extensive discussion—the persecutor is somebody once loved; but unconscious guilt feelings transform the feeling of love to hate for the person loved; and, this again is transformed and, in the process of projection, is felt as hate by, not for, the person once loved. In the Freudian view, paranoia is an independent clinical entity although frequently complicated by schizophrenic features. It is distinguished from dementia praecox by a different location of the point of fixation and by a different mechanism for manifestation of repressed material.

Adolf Meyer's investigations of causation do not differ widely from Freud's. He describes "a paranoic type of constitution" which approaches Kretschmer's sensitive type. He finds cases of

"acute paranoia" which can be helped by reliance and security, imparted by the therapist without a deep analysis, and finds that in some respects these acute cases resemble manic-depressive attacks.

The most recent tendency is to view paranoid symptoms, not as a sharply defined disease entity, but as a syndrome to be found in many disorders. Charles W. Miller, whose work has already been mentioned, finds this syndrome in paranoid and other forms of schizophrenia, in other paranoid conditions, in senile and arteriosclerotic psychoses, in syphilis of the central nervous system, manic-depressive psychoses, involutional psychoses, and in a small number of cases associated with somatic diseases other than those mentioned, and in cases associated with epilepsy and with alcohol. He finds a rather typical prepsychotic personality in patients developing paranoid syndromes, "asocial traits, uncontrollable temper, marked projection tendencies, a suspicious or jealous nature, a rigid makeup, introspective traits, unjustified pride, inability to make concessions"—Miller's prepsychotic personality is in accord with Kretschmer's sensitive character in some important characteristics. Miller, on the other hand, approaches the psychoanalytic viewpoint in finding in all cases an "inadequate and unsatisfactory sexual and marital adjustment." He concludes that development, course and modifiability of the syndrome depend upon the specific life situation and upon hereditary and constitutional factors.

The paranoid syndrome is seldom described in children and adolescents; one may hold that the intellectual apparatus of the child is not developed enough to form complicated systematized delusions. Howard W. Potter states that "delusional formations in childhood are relatively simple," but he describes in Case 5 in his "Schizophrenia in Children," a boy with a definite paranoid syndrome. Another paranoid symptom complex in early childhood is described in Case 3 of "Schizophrenic-Like Reactions in Children," by Clardy, Goldensohn and Levine; and Frederic Rosenheim describes another childhood case in his "Character Structure of a Rejected Child," the formation of symptoms in a boy of 13.

The case which follows here, that of 12-year-old Walter B., has been observed and treated at the children's group of Rockland State Hospital from August, 1939, to the present time.

CASE HISTORY

Family History. There is very little information available about the patient's maternal and paternal grandparents. All four lived and died in Germany. The paternal grandfather was described as a mild-mannered, hard-working man; there is nothing abnormal known about him. The grandmother was a home-loving, industrious, good-natured woman. Nothing is known concerning collateral relatives.

The boy's father was born in Germany, had a public school education there, attended a trade school and served in the German army for two years—fought in the first World War on the German side. He came to the United States at the age of 27, made his living as a painter and married a German girl after having been in this country for one and a half years. He has always been in dependent positions and has lived on a moderate income. He is a rather quiet, passive, dull, narrow-minded personality, correct and orderly in an almost compulsive way. Besides his trade, he is interested in carpentry, and he had a little shop in the basement of his home. He was very proud of Walter when he was a baby and must have "spoiled" him a great deal during his early childhood. But, after having gone through troubles and worries in bringing him up, he changed his attitude toward the boy and later on rejected him completely under the influence of his second wife, whom he originally married with the idea of providing a new home for the boy.

Walter's own mother was of German descent, too. She was described as seclusive, queer, extremely anxious and nervous. She was afraid to cross streets. After childbirth she became extremely fearful, restless and worried. She feared that the boy might be abnormal because his head was misshaped. Three weeks after his birth she jumped from the window of a third floor and died immediately thereafter.

Personal History. Walter was born in Lincoln Hospital, September 10, 1927; he was a premature baby and weighed only five pounds; he had a misshapen head.

After his mother's death he was brought to a parental aunt's house where he stayed for six months. She could not keep him longer because her husband became ill. Therefore, Walter's father

took the child to Germany in order to have him brought up by his mother's parents. But when he arrived there, the maternal grandparents refused to take the boy in their home for unknown reasons. Therefore, Mr. B. took the child to his own parents in Germany who accepted him. Walter lived with them for five years while Mr. B. returned to America. There is no reliable information available as to how the grandparents treated the child. Walter's father says that they were strict with him because he was hard to handle—very active and aggressive toward other children. He had tantrums and used to cry when frustrated or thwarted. Walter himself says that the grandparents were very nice to him and let him have his own way most of the time. He especially loved his grandmother.

After his grandfather's death, Walter was brought to the United States by his father and was placed at the home of a paternal aunt. This woman apparently did not know how to handle him. She was strict and "hard" and used to hold her own children as an example before Walter. Therefore, Mr. B. removed his son from his sister's house after he had lived with her for about seven months; and Walter was sent to an orphanage, where he remained for three years. This institution is said to have a reputation for a very rigid discipline and a punishing attitude toward children. Walter was very unhappy there. He was described as having been stubborn and aggressive, and a problem in school at that time.

In December, 1936, Mr. B. decided to remarry to provide a home for Walter. The stepmother (37 years of age at that time) is a nervous, tense, self-centered and domineering woman. She asserts she has been operated on three times for the removal of the thyroid gland. She had had no experience in bringing up children and had no warmth of feeling toward Walter. She criticized him from the beginning of their relationship and called him "mean, incorrigible and taking after his own mother." She disciplined him by beatings and threatened to send him to a reformatory or "crazy house." Once, she locked him out of the house and let him stay outdoors during a rainy night.

Walter hated his stepmother and became more and more resistive and stubborn. He was a severe behavior problem in school, could not concentrate and had fights with children in his neighbor-

hood. His stepmother took him to the child guidance clinic at the Vanderbilt Hospital and she reported at Rockland that she was told by a doctor there that "nothing was wrong with the boy, you have just to beat it out of him." (When asked the name of the doctor, Mrs. B. flushed and said that she could not remember.) / In October, 1938, Walter was referred to the Children's Aid Society because the home situation had become intolerable. He, consequently, was placed in a foster home where he got along for the first few weeks, but became very unhappy and demanding afterward. He complained that the foster parents did not love him and did not care for him.

After a three months stay at the foster home, he ran back to his own family, who, however, refused to accept him and sent him back to the foster home. On the way back, he met with an automobile accident, was not seriously hurt, but suffered from a severe shock. It is known that his stepmother's attitude at that time was "too bad that he did not get killed." Back in a foster home, Walter felt so desperately unhappy that he tried to commit suicide by putting his hand on the third rail in the subway. His stepmother made fun of him at that time by stating that he did not even have the courage to kill himself.

During his stay at the shelter of the Children's Aid Society, and the first period in a foster home, the boy was treated by a psychiatrist of the agency who considered him to be a very disturbed boy. The diagnosis made at that time was "psychoneurosis, compulsive-obsessive type with severe anxiety." A mild paranoid trend and a tendency toward projection was mentioned. Walter was seen during two and one-half months in weekly psychiatric interviews. He made a social contact with the psychiatrist easily and was willing to discuss some problems in a superficial way. The physician did not attempt to probe deeply since Walter had so many reasons to distrust and fear adults. After some time, the boy was able to accept limitations, whereas he had been quite strongly demanding in the beginning. He became interested in toys and, at times, became very excited and displayed anxiety when playing with aggressive toys. After a number of interviews, he became quieter and improved in general behavior also.

Psychological tests done at that time placed Walter in the dull normal intelligence group. It seemed, however, doubtful whether he functioned on his real level because of his emotional instability. He reached the 18-year level on the Ferguson Form Board test, indicating unusual motor ability and coordination.

Treatment was discontinued because the second foster home was too far from the psychiatrist. Walter had been placed in the home of a 60-year-old woman who took care of two other foster children. It was reported that the boy got along extremely well with the woman whom he called "granny" and to whom he attached himself intensively. Unfortunately, she died suddenly some months later and Walter was taken back to the Children's Aid Society, which now asked for institutional care for him.

Course of Illness Since Hospitalization. At the time of his admission to Rockland State Hospital (on August 16, 1939) the boy was 11 and one-half years old. He was an extremely disturbed child at that time. At the initial interview Walter appeared quite hyperactive. He said, "Sometimes I hear peculiar voices. I think people put things in my food." When the boy spoke of his difficulties and worries at home, he did not display an adequate emotional reaction. He often appeared superficial and silly. There was a splitting present between mood and thoughts. He was considered a boy with a severe personality disturbance, probably a schizophrenic reaction.

His physical condition at that time was fair. He was tall and long-legged and only slightly undernourished. The psychologist classified the boy (on November 29, 1939) as of low average intelligence on verbal and superior on the nonverbal scale. On the Stanford-Binet, Form L, he rated an I. Q. of 90 and on the Arthur Performance 122. The psychologist noted that the boy was very tense and hyperactive in the test situation. The examiner's impression was that Walter was of at least average mental ability with indications of superior ability on nonverbal material. The test ratings were somewhat inaccurate because of the disturbed emotional status.

In the cottage he felt unhappy and lost among the group of children, found the place and the other boys dirty and developed the compulsion of washing his hands with great frequency. He was

seclusive, withdrawn and definitely suspicious. He accused other boys of "picking on and playing tricks" on him. Consequently, he could not get along with them, fought and quarreled rather frequently and worked himself into tantrums. At that time, he was not able to attach himself to adults, but distrusted them deeply. Once, the cottage mother gave him a new coat from the linen room. Walter refused to take it stating, "I don't want it because there are worms in it, you are trying to poison me with skin disease." Another time he refused to eat the food in the dining room because he was afraid that somebody might have put "dog pills" in his food to poison him.

During the first part of his treatment, he worked under permanent tension and anxiety in class. Although he tried very hard to be "perfect," he accomplished very little and became extremely discouraged. He daydreamed frequently in school, hated school and his teacher and said that he did not need an education but would prefer any kind of mechanical work in order to earn his living later on. It was suspected, but could not be definitely proved, that the boy hallucinated during this stage. At that time, he was considered a boy with a severe personality disorder—probably schizophrenia. After the first year at Rockland State Hospital Children's Group, however, it was recognized that Walter had improved to a certain degree. He had made a fair superficial adjustment to cottage routine, mixed a little bit better with the group but was still suspicious, distrustful and insecure.

Course of Treatment. At the end of January, 1941, Walter asked this writer for an interview and was obviously anxious to talk about himself. He complained that he did not sleep well, that he sometimes awakened very early in the morning and was not able to fall asleep again. After such nights, he felt tired and irritable all day long and was disturbed and confused without sufficient reason. He further said that he was rather helpless at times because "things around do not seem real; the world is like a gloom and I am dull. All of a sudden my brain clears up and everything is all right" (depersonalization). When he experienced this change of reality around him he felt utterly lost. Nothing was of interest, and he did not wish to live any more. He was afraid that there might be something wrong with him, "I am different from others."

He asked the writer for information and explanation, stating frankly that he constantly feared "to get crazy." He also wanted to know from what sickness his mother had died, whether she had been "crazy" and therefore the same might happen to him. He had been told that his mother died immediately after his birth and he had been wondering lately if there had been anything wrong with him from birth—with his brain or his nerves.

It was evident that the boy was extremely worried about himself and in great need of intensive therapy. It seemed a favorable sign that he had taken the initiative and had asked for interviews, being willing to "open up" to somebody whom he might trust and who, as a physician, would be able to help him. It also appeared significant that he approached a female psychiatrist. He said later on that he had never been able to talk freely to a man about himself but had always felt that a woman could understand him better.

Walter was, therefore, seen by this writer in regular psychiatric interviews, daily in the beginning, later three times a week, during a period of one year. He was offered complete freedom in the office and could choose whatever he wanted to do. Usually, he preferred to talk and to discuss his problems. Only occasionally, he occupied himself by drawing, usually a chart for the therapist's time schedule or a chart to indicate his mood swings. The psychiatrist purposely did not question him; only occasionally, did she ask him to remember and report his dreams if he could. From the beginning, he was able to verbalize surprisingly well for his age and apparent mental ability.

His behavior was well-mannered and polite, although formal. Later on he became freer, but never demanding or "fresh." Occasionally he played out aggression by going around with a big wooden stick and beating "the devil's tattoo"—when he was in a bad mood, often discussing disagreeable life experiences. Although he had come on his own initiative for help he was not sure in the beginning if he could really trust the therapist. He felt tempted, but had deep-seated doubts to overcome, so he tested the writer by asking for extra time and favors, discussed the question with the cottage mother until he decided definitely that he had no reasons for scruples and hesitations. From that time on he talked quite freely about himself and his life experiences and appeared

very sincere. Very gradually, over a period of about three months, he developed a strong transference to this writer, which made possible later modifications in his social adjustment.

The first topic which Walter wanted to discuss was his relationship to his father. It became evident that his feelings toward his father were typically ambivalent, vacillating between love and hatred. As a small child he had loved him very deeply and exclusively. It is not known how the frequent separations from his father influenced the boy's feelings in earlier years. It is, however, clear that Walter's love for his father turned to bitter hatred from the moment he became aware that his father's attitude had changed toward him under the influence of his stepmother. The boy felt that the father did not love him any more. He remembered many details of the time when he had lived with his father and stepmother and reported them with great bitterness. On one occasion, he said spontaneously, "I will tell you something, my stepmother threw all my toys on the floor and destroyed them. My father shut me out of the house one night and let me stay in the rain almost the whole night. I was not allowed to use my parents' bathroom, I had to wash and dress myself in the cellar."

At another time, Walter was able to be more objective toward his father and tried to understand him and his rejecting attitude. "My father does not know better. He is influenced by my stepmother." He even indicated that he suspected his father might feel disappointed in his new marriage because his second wife was not able to provide a home for the boy. Walter characterized his father as quiet, home-loving, industrious and hard-working, but, "He is not modern enough; he is too German-like. We are in America." He spoke admiringly about his father's little carpentry shop in the basement of their home. Walter worked for some time in the hospital's carpentry shop, thus unconsciously identifying himself with his father.

In discussing his stepmother, Walter explained that she is a woman who had never had children of her own and is, therefore, not able to understand and handle them. He felt that she never loved him, never was kind and friendly, but only strict and critical toward him. She used to yell at him for little things, such as a spot on his pants or shirt. She was always afraid he might mess

the house up. She didn't allow him "to have fun." She ordered him to go to bed early as if he were "a baby." She repeatedly told his father that he was "bad." Even when he kept quiet and did not answer her scolding, she went on and on, yelling at him until he lost his patience. He remembered that after he had run home from his first foster home because he was so unhappy there, his stepmother had sent him back to his foster parents. He remembered that he was disturbed and confused and had met with a minor automobile accident on his way back. He knows that his stepmother was disappointed that he was not seriously injured. He also recalled the other occasion, when he had tried to commit suicide by putting his hand on the third rail, and when she had said that he was not even courageous enough to kill himself. He said that the stepmother wanted his father for herself exclusively and that he was in her way. After he had been on his first vacation at home from the children's group, he confessed that he felt completely lost and unhappy at home and no longer enjoyed life. One day he had taken his bicycle and had ridden along Long Island Sound near a bridge and considered jumping into the water. Back in Rockland, he was depressed and moody for more than two weeks and thought of climbing up a tree and jumping to his death because he felt life to be unbearable.

Nevertheless, when the next vacation time came, Walter wanted to go home again, and he tried to find out something which would better the situation for him. He asked if he could take another boy of the group with him to distract his mother's attention from himself. When he had written his parents asking if they would come up to take him home for vacation, they did not answer for some time. The letter the boy received finally was evidently written without any warmth and affection, thus revealing how strongly the father and stepmother rejected the boy. They did not even want him for a short visit. Walter felt that very strongly and relapsed at this time into his old state of insecurity and distrust. He said, "I cannot trust anybody. I am not sure of myself. I don't see any sense in going home." Then he took the letter, asked for matches and burned it up. "Now I feel much better; I am better off here." It was finally agreed that he should go home at Easter for a few days, only to satisfy his desire for riding his bicycle and

"having some fun." He returned again in very bad shape, his outer appearance was neglected, he was depressed, unhappy and confused. He explained, "I did not feel like anything, I did not feel happy, I did not enjoy anything. I spent much money—five dollars—during these few days. I sold my bicycle for two dollars."

Since attempts by the social worker and therapist to work with the parents and to change their attitude toward Walter had not been successful, therapy was directed, after the boy's unhappy experiences during his vacations, toward strengthening his feelings that he had nothing to hope for from his home. It was shown to him that all his efforts would not better the situation. Finally, Walter was able to face the facts and to plan for his future without considering living with his parents. In this way, the home problem was finally worked through.

Walter's early memories concerning his grandparents were quite vague. He talked with great appreciation and affection about his grandmother, stressing the fact that she was a very good woman who always cared for him "wonderfully." The grandfather was more strict, at least as soon as Walter became older and more independent. The boy admitted himself that he liked to play in the streets as long as he wanted to and did not like to come home in time. He got some severe beatings from his grandfather on account of this. He also remembers his special friend, "Egan," who was older than himself and whom he loved very much. His grandparents at first liked their friendship, later on they forbade Walter to be with Egan too frequently. On the whole, the time with the grandparents was the happiest of his life, according to Walter's memories. He loved them both and it was a shock to him when the grandfather died and he had to come back to the United States.

His memories from that time on are very sad. He was extremely unhappy in his aunt's house, hated the other children there and wanted to be with his father. At the same time he found school very unsatisfactory, boring and difficult. The other children made fun of him because he spoke poor English, and he was extremely sensitive about it. Consequently, he fought and quarreled and attacked them—as he admitted freely. He had the worst time in the orphan asylum. He did not like to be reminded of that time at all,

because the memories were too painful for him. He admitted, however, that he was absolutely confused then. He refused to tell about the experiences in his foster homes because those times also were too terrible for him, and he hated to even think of them. The short time in the aged woman's house, however, was "good;" he liked her "like his grandmother," and felt happy there for the first time since he had left his grandparents' house. He says that he even got along with the boys there.

At the time when the relationship between the boy and therapist was solidly founded and Walter felt secure in it, he asked spontaneously—though with some hesitation—if masturbation was very harmful for a boy. He gradually disclosed that he had practised it for years, maybe since he was six or seven, (at another time he said four or five). He said that it was a permanent source of worry and fear for him because he had been and still was afraid that this practice might make him sick physically and mentally. Although he feared these consequences he could not help repeatedly "doing dirty" again. He further confessed that he felt "mean and dirty" because of his masturbation and he suspected that other people might, therefore, despise him. The boy was greatly relieved when it was explained to him that masturbation was a widespread habit among children and that it had no evil effect on either the body or the mind unless the person was too concerned with it. This reassurance had to be repeated frequently after the first discussion of the subject.

At this stage of treatment, Walter remembered the following dream. "I was in jail together with William, and we played with one another." In connection with this, another dream fragment came to his mind. "I was in the woods with a girl from Cottage I and she had a big dick. I was fooling around with her." Asked to express frankly what came to his mind in connection with this dream, he said that he got excited when he saw pictures of girls in journals and had to masturbate afterward. The next day, he reported the following dream. "We had parole all over the place, and I went to see an old friend of mine in one of the buildings, a Mrs. A. There I met a boy-friend from Germany, Egan, with whom I used to play when I was at my grandparents' in Germany. He showed me his big, very good bike. I had my bike with me too and

it was a good one, but not as good as his. But I had a speedometer, too." In association to this dream he said that his grandparents did not allow him to play with other boys on the street, but he did so, nevertheless, and Egan was his special friend, although he was older than himself. In another connection, he admitted that he learned masturbation from Egan.

During this time, the "bike" reappeared frequently in his dreams. He ran people over with his bike; and he did not feel guilty but was proud, because everybody looked at him and he felt that he was strong. It was evident that the bicycle was a symbol of male strength and power (penis) for Walter. The dream about his first male friend, Egan, and the association of his being an older boy and having a stronger bike, revealed the beginning of the boy's sexual conflict. It is also interesting at this point to note that the boy talked of going home to "ride his bike and have fun," and that after his last severe disappointment at home he sold his bike, feeling his parents' rejection to be a form of castration.

Before the onset of therapy, Walter had always felt extremely embarrassed in the presence of girls; he used to "blush all over" when spoken to by a girl and he did not know how to approach one. He would withdraw when girls were around and felt definitely more at ease in the company of boys. His sexuality was self-centered by his masturbation. He began to feel differently during the course of treatment. After he got over his masturbation complex and the consequent self-reproaches, the transference developed to a very emotionally charged, erotically tinged relationship. This apparently provoked guilt feelings which now drove him in the direction of heterosexual relationship. He made contact with an attractive but highly aggressive and quite sexually experienced girl—Edith C.—whom he met in class. She was the more active one in this relationship. For some time, Walter was rather preoccupied with her, talked with her frequently and seemed to enjoy being her boyfriend. One day he said, "Last night I was half asleep, I thought of Edith and I was overhappy, it was like burning up." In connection with this he meditates about "happiness" and explains: "There are two kinds of happiness; a cheap one which is a gloomy kind of second-hand happiness. The real one is deeper; more genuine; all in your heart."

It is not known how far the relationship between Walter and this 13-year-old girl, who was a sex problem at home and was still very much preoccupied with sex during her stay at the children's group, developed. It was, however, evident that the question of sex relationship between males and females became acute for Walter during this time. In one session, he asked how boys and girls "really come together." When an attempt was made to give him sex information on an anatomical physiological basis, he listened seriously trying to understand. It was evidently exciting, confusing and disturbing for him; and, following the explanation, he asked some very unusual questions: "How would it be when I would have intercourse with a lion? What would come out of it?" He insisted that he had seen mixtures of human beings and animals such as a man with the head of an ape or a man with the legs of a bull in comic books. At another time, he asked: "Is it true that in China boys and girls marry when they are seven or eight years old? What would happen when I would go there?" Walter's dreams during his friendship with Edith were all concerned with girls. In these dreams he "did dirty" not only with Edith, but with other girls from the girls' cottage.

At this point, the boy went to a summer camp for four weeks. The reports from there indicate that he was rather shy and sensitive when he arrived, but soon became able to mix with the boys and girls there in their activities. He overcame his social inhibitions and attended parties and dances. He got very friendly with a girl whom he described as very fine and decent and whom he thought a "better girl than Edith." After his return to the children's group, he did not want to see Edith any more, he had become very critical of her and did not give in when she wrote him numerous letters asking him to take her as his girl-friend again. He explained in interviews that he despised her now and did not want to bother with her any more. He indicated now that she had made sex advances, which he had refused, before his camp vacation. He felt quieter when he was away from her, and he did not want to get into temptation again. During this time, his full sex interest became concentrated on boys again, and he confessed that he allowed a younger boy "to do dirty" with him.

It had been necessary to transfer Walter to a cottage of older boys. He could not have a room of his own there and was in an atmosphere of adolescent boys who all had their sex problems. Walter had a hard time at first to adjust to this new environment especially as he had formed rather a strong attachment to the cottage mother of his former cottage. However, he overcame the first difficulties of adjustment and was, after some weeks, able to hold his own with the older boys. He felt very grateful that he could talk freely about all the newly-arising problems to the writer and could have advice and help. It must be acknowledged as a sign of the boy's growth, that he was able to cope with the much more difficult situations at this cottage.

He was paroled from the children's group on April 7, 1942, to a foster home in a neighboring community, where he attends public school. He is in the process of making a fair adjustment, although he found school too hard in the beginning. He likes the foster mother who tries to understand and to accept him. Since the writer was not at the children's group during this period, whenever Walter was in some difficult situation, he came to his former cottage mother who was prepared to advise him to the best of her ability. He bought himself a bicycle from the money he had saved during his stay at Rockland and is very proud when he comes to visit on it. After six months stay outside of the hospital, Walter learned the writer had returned and came to visit her. He was in good physical condition and appeared at ease and rational, and said that he was happy and satisfied with his life. He had saved some money from working on week-ends and had bought himself clothes. He was very well-groomed and clad. He visited his parents and handled the situation very skillfully, by staying only a short time and appearing very independent. He felt that their relationship to him seemed to have improved; so that he decided to visit more frequently on week-ends. Subsequently, Walter has held several good positions, one of which was in a grocery store. He lost this job because of his inability to figure on paper. He had no difficulty finding another job, but he came to the conclusion that he would save money and hire a tutor for arithmetic. He makes a good social adjustment in the little town and has a great cultural drive. He is interested in "nice, better" girls. Walter is still quite dependent

and in need of help, advice and reassurance, but it should not be forgotten that the boy is only 14 years old and too young to be completely on his own.

DIAGNOSTIC EVALUATION AND SUMMARY

This boy's familial background is very unfavorable. The mother was a mentally sick, probably schizophrenic, woman who developed an acute psychosis after childbirth, most likely a catatonic attack, during which she committed suicide. The father might be called a schizoid personality, a very rigid, slow-moving, dependent, passive and withdrawn individual. The boy derived, therefore, from both parents a tendency to schizophrenic reactions.

Constitutionally, Walter was rather weak from birth; he had a misshapen head, and was weak and thin in body build. He got stronger later on but still too tall, is asthenic, long-limbed for his age, not very broad-shouldered, quite flat-chested and weak-muscled. He tires easily and is inclined to frequent colds; he suffers from headaches and dizziness rather frequently, especially in the morning. Besides these hereditary and constitutional factors, the boy's character structure and his unfortunate life history, with very poor environmental circumstances, are of major importance for the development of the paranoid syndrome in this boy.

He is the typical "sensitive" character; very conscientious, slow, cultivated and delicate by nature. His life was extremely unhappy. He was rejected, so to speak, from birth, by being deprived of his mother. Later on, he was shipped from the home of one relative, who was not very patient with him, to another, until he could stay for some length of time with the paternal grandparents. Here, contrasting influences, ranging from overindulgence to rigid strictness, acted on him unfavorably. He encountered the most severe rejection and frustration later on, on the part of the stepmother and of his own father. As a consequence of all these unhappy experiences, the boy developed a specific reaction pattern. His defense mechanisms were withdrawal, repression of his deeply-hurt feelings and retraction within himself, with complete isolation. He fell back into himself and loosened all his primary contacts with reality. This kind of reaction is a typical schizophrenic one. He also has a tendency to repress everything occurring within himself,

that means all his drives and urges. He objects strongly to his sex urges and condemns himself on account of them, a condemnation which is reinforced by the experience of rejection at the point when he began masturbation. Consequently, he suffers from guilt feelings whenever sex urges arise in him; and he takes a self-punishing attitude, as in his ideas of suicide. On the other hand, he projects his doubts and his denial of his own sexuality outward on others. He now feels himself criticized, condemned, endangered by others. This mechanism leads to the development of his paranoid ideas.

It is noteworthy that this boy's original masturbatory experience occurred as a homosexual relationship at the age of four to six, when the boy had not yet resolved the Oedipal relationship, thus fixing him at the homosexual stage of psychosexual development. His first sex experience (masturbation with another boy) was immediately followed by strong criticism on the part of his grandparents and a succession of severe traumatic rejections and frustrations, beginning with the death of his grandfather and ending with the complete withdrawal of his father's love. These traumatic experiences account for the great dynamic power of his guilt feelings, which, by the process of projection, create his paranoid ideas.

As soon as the boy was able, on the basis of the strength of the transference relationship, to talk freely about his fears surrounding sexuality and to associate to his dreams, thus revealing unconscious material, his paranoid ideas disappeared gradually. He was now able to develop the Oedipal relationship within the transference and succeeded in resolving it into a heterosexual relationship with a girl of his age. In a later stage of treatment, when he was exposed to homosexual activities of older boys and greatly tempted to mix with them, he did not produce paranoid ideas because he did not suppress his drives and create guilt feelings but communicated freely with the therapist about all these acute experiences. He became objective toward them and felt reassured.

It was fortunate that Walter came into intensive psychotherapy at an early age when the schizoid reaction pattern was not yet too deeply fixed. Surprisingly, he was able to establish a relationship with the therapist, which gradually became stronger and deeper. On the basis of his feelings of being accepted and appreciated he could "open up," give himself completely to another person and

admit her into the circle of his life. In this way he overcame the schizophrenic isolation and found contact with the world of objects again. He found himself accepted and loved by another person in spite of his inferiorities, which were manifested in his mind in his masturbation and homosexual activities with younger boys.

During this process of finding contact with reality, he lost his pathological symptoms: He gave up his paranoid ideas; he became social and mixed better with the group; he became interested in school and work. If, however, he had not been treated early in his life, the reaction pattern of withdrawal from reality, repression of his natural feelings, projection of guilt feelings and self-punishing attitudes would have become rigidly fixed and he would have developed into a clean-cut case of schizophrenia—of the paranoid type.

GENERAL CONCLUSIONS

This paper has attempted to describe the development of the mechanisms and factors leading to a paranoid syndrome in a boy of 12 and one-half years, a condition which could be helped by the establishment of a strong and deep relationship with the therapist. It is interesting to compare these findings with the latest concepts on paranoid ideas. Freud's emphasis on the mechanism of projection seems fully justified as the most important dynamic force in the development of the paranoid ideas.

The importance of the sexual conflict, especially homosexual drives and general sexual maladjustment, which later authors (Suchen, Miller) also stress are demonstrated. There seems to be the necessity for a characterological basis—in Kretschmer's sense too: a refined, hypersensitive, easily hurt and differentiated personality who tends to withdraw from reality into himself in life difficulties (schizoid personality). There is always a highly-developed super-ego (conscience) which urges the patient to negate his own sexual drives and to feel inferior when he is not able to succeed in suppressing them. In life situations, when the latent problem becomes acute (as described in Kretschmer's cases), the individual is unable to cope with the conflict any more and the acute attack of psychosis—of the paranoid type—sets in. There is a certain physical constitutional condition present in these cases; they are of the asthenic type, as is the present case.

In adult psychotics, it is not always possible to go back to the earliest stages and the first trauma; and, therefore, the fixation point and the mechanisms cannot always be explained. The therapeutic outlook is, therefore, less fortunate. Nevertheless, intensive psychotherapy should be tried in all cases.

It might be stressed also that it is highly important to diagnose and treat schizophrenic reaction types in children as early as possible by the most intensive form of psychotherapy. Even when they do not react immediately and the contact with the therapist does not seem to be established and deepened for a long period, one is frequently surprised when one day there is a sudden overt reaction to the relationship and a more favorable prognostic outlook.

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THE FINAL COMMON PATH OF THE TOTAL PERSONALITY

A Rationale of a Program for the Study of Psychiatric Disorders

BY G. M. DAVIDSON, M. D.

I

This paper proposes to outline a program for a uniform study of psychiatric disorders. On the face of it, the proposition may appear daring; but while this may be so, the task is not impossible, since it does not aim to solve psychiatric problems in a grandiose way by offering another ingenious theory. On the contrary, the paper is simply an attempt at creating a basis upon which all workers in psychiatry could build in harmony, each from his own angle. Since the project must be necessarily incomplete, one must leave gaps here and there to be filled in, in the course of time, by accumulated knowledge. This appears preferable to overcompensating for our present deficiencies in knowledge now, because in so overcompensating, we ever so often present only a phantom structure as a solution of the problems involved—or offer a solution which is altogether in the field of semantics.

One way which would facilitate the development of such a uniform approach would lie in the abandoning of certain fallacies which have been dominating our minds regarding the way of solving our psychiatric problems, and which will be discussed presently. Another way would lie in mastering personal inclinations. To this end, the comparative method of study would seem to promote objectivity, because this method ignores etiological factors as a basis for classification. In following this method, the writer has been able to establish common traits for certain groups of psychiatric disorders. Finally, the writer believes that one may speak also of a common denominator for all psychiatric disorders, as will be specified and defined later. Attention is called, however, to the fact that clinically, in addition to the common denominator, there may be another factor or factors which may arise from certain situation or situations. Before discussing the nature of the common denominator, the writer would like to point out certain fallacies which we would have to give up, and further point out certain principles which we would have to accept in order to make our presentation comprehensible.

II

To begin with, consider the gross division of psychoses into organic and functional mental disorders. Such a division, while useful, is obviously conditioned by the mechanistic outlook and is untenable from the present dynamic viewpoint. In a sense, every mental disorder is both organic and functional, since there is no function without structure. In a more limited sense, it is true that there are no morphological changes in a number of mental disorders. But it is equally true that in such disorders histochemical changes are more than suspected. We know, further, that impairment of function will produce greater changes than impairment of morphology. On the other hand, we also know that certain morphological changes, such as those of cerebral arteriosclerosis, do not have to be accompanied by a psychosis.

The situation becomes comprehensible if one considers that a psychosis is rooted in various levels of the total personality, and if one accepts the views of Hughlings Jackson concerning positive and negative symptoms of a mental disorder—the former referring to release from control, the latter being understood in terms of functional deficiency. Clinically speaking, there are psychoses in which one deals predominantly, if not exclusively, with positive symptoms, while in other psychoses, one deals essentially with negative symptoms; and in still others, both positive and negative symptoms are present. The common denominator is regarded as the matrix of the positive symptoms. The negative symptoms are accounted for essentially by an additional factor or factors as arising from a definite situation or situations, as postulated. Still, the common denominator is at times also instrumental in the production of the negative symptoms.

Consider further the division of certain psychoses in affective and trend-reactions. When examined critically, such divisions must be regarded as invalid, because if one chooses affectivity as a point of departure, changes in affectivity are observed in both types of reactions. To illustrate, one need only think of the dissociation of affectivity in schizophrenia.

The division of mental disorders into narcissistic and transference neuroses as was done originally by the psychoanalytic school is evidently inadequate. There is no doubt that transference is ob-

served in certain schizophrenics as this disorder is understood at present, and some of today's leading analysts would be the first to testify to this. On the other hand, there are a number of so-called psychoneurotics who do not make good transferences. Neither can one proceed to classify psychoses on the principle of regression-fixation, since a person may develop fixation at various points of his scale of development. Furthermore, a regression does not remain constant at a certain level, nor can the level be exactly determined and defined. The present writer must add that this has been recognized by no less a psychoanalyst than the late Dr. Paul Schilder, who held that "regression cannot be considered any longer as the center of a theory of human behavior."

Again, consider the approach of the psychobiological school which identifies psychoses as "ergasias." This is no doubt an advanced view, which attempts to measure the individual in his totality as expressed in his activity or behavior. This approach apparently evolved from the recognition of the rôle that personality plays in mental disorder. However, the concept is, at present, too broad to be applied for clinical investigation, since methods of measuring the totality are lacking. The totality gives data for sizing up a situation but does not help in elucidation of the dynamic mechanism of a clinical phenomenon. The latter can be fully understood only psychosomatically, and this method in turn requires the breaking up of the total pattern of behavior into partial patterns.

Next, comes the question of etiology in psychiatric disorders. Here, the effect of traditional medical thinking is obvious. We look for "the" cause of a mental disorder as in the same manner as we look for "the" cause of measles. We apparently lose sight of the significance of the total personality which we emphasize otherwise; and, above all, we forget the teaching of the biologists as expressed by Jennings—that what we consider to be "the" cause is often not the cause at all, and that causes are multiple. The result of such traditional thinking appears to the writer to be responsible for confusing psychopathology with etiology. One forgets that understanding of human nature is one thing and that understanding the nature of a psychiatric disorder is not quite the same thing. The search for the etiology of psychiatric disorders

(which in itself should remain untiring) has resulted in such concepts as psychogenic, biogenic, exogeneous and endogeneous. This reminds one of the question of heredity versus environment and bears testimony again to the wisdom of Jennings' answer to the question, namely, that all characteristics are hereditary and all characteristics are environmental but that no one characteristic is either exclusively the one or the other. Personally, the writer has no doubt that the alleged exogeneous picture of certain mental disorders, for example, does not differ from an endogeneous picture but is released and colored by exogeneous factors.

The writer would like to call attention to one more fallacy, that of regarding certain levels of the total personality as autonomic or antagonistic. This view is wrong, because we know, for example, of the influence of the emotions upon the vegetative nervous system and of the influence of the latter upon the brain. Again, there are the studies of Spemann showing that cooperation of various levels of the totality is manifested from the earliest stages of embryonic development. The principle, therefore, is one of synergy and receptivity and not that of autonomicity and antagonism. Maintenance of equilibrium depends upon synergy and receptivity; it is in disorders of the personality that dissociations, splitting, antagonism, etc., are observed.

III

With the foregoing in mind, the writer would like to outline a few of the principles which it is necessary to apply in the search for the common denominator in psychiatric disorders.

First, there is the concept of the total personality. In the past, skepticism was expressed regarding such concept. Nowadays, it will be easier to accept the term by those who were doubtful before, because one hears so much at present about totality. There is a total war, a total defense, a totalitarian state. By the totality, is meant the education of a multitude of parts to work in harmony for the benefit of the totality. Depending upon the harmony and unity achieved, there may be all degrees of functioning up to a maximum of efficiency. Dysharmony results in clumsiness in its mild expression, failure in more pronounced states, and disaster in case of severe expression.

There is also a total personality which is composed of a multitude of parts which may or may not work for the benefit of the individual, approximately on the lines described. The total personality is composed of organism and function, which together may be termed constitution and environment. The latter is also identified with experience and is understood to comprise both the outer and inner *milieu*. Under experience, are understood to be all influences of external and internal stimuli which act upon the constitution and help in construction or integration, modification and conditioning of the totality. Experience will include all environmental data in time and space, inclusive of heredity, meteorological and alimentary conditions, and disease.

The integration and unification of the totality is the result of several agents, such as the mechanical and chemical, as is emphasized by Sherrington. Integration proceeds on segmental and hierarchical principles. To begin with, there is an advance in differentiation of viscera and glands before the neural plate is differentiated. However, the primary physicochemical integration already combines itself at the second month of foetal life with the nervous system. The anabolic parasympathetic evolves earlier than the catabolic sympathetic system. These facts, together with certain experimental data, suggest that the central nervous system requires, for its proper functioning, continued impregnation with biologicals which are produced at various levels of the totality. The psyche is constructed and oriented upon the brain but its horizon is much wider than neurological mechanisms. It is only in action that both psyche and brain fuse, forming, so to speak, an ensemble. This might be the reason why there are so many causes and so few clinical pictures of psychiatric disorders.

Second, from a psychosomatic viewpoint there can be no effect without an intervening medium. The latter is identified with the internal *milieu* which comprises both cells and medium and which in turn, the writer considers to be the common field of action for both physiological and psychological phenomena. In this connection, the writer would like to call attention to the work of Zondek, who identifies the endocrines, the sympathetic-parasympathetic systems and the electrolytes as a functional unit—the vegetative nervous system. Of further interest here, is the work of Loewi,

Cannon, Dale and others concerning the chemical mediation of nervous impulses between neurons as well as between neurons and tissues, thus implying that psychological factors virtually reach tissues. This activity is accomplished by the medium of the common field of activity which has been mentioned.

Third, it seems strange that while we have always been interested in the question of etiology of mental disorder, we have not given as much attention to the reason why, under similar conditions, one individual does not develop the same condition as another. In other words, the question of selectivity of so-called etiological factors has not been studied sufficiently, although references to such selectivity (resistance) in physical disease are made. Here, belongs the question of maintenance of the balance of the internal *milieu* as raised already by Claude Bernard, or the question of homeostasis as emphasized by Cannon. As far as mental disorder is concerned, the present author has discussed the subject in several writings referring to the system of defense of the total personality. He has called attention to the fact that while the psychiatrist makes a good deal out of the "defense of the ego" as demonstrated in psychological mechanisms of repression, compensation, etc., the physiological aspects of the system of defense are neglected in psychiatry. This system of defense manifests itself in ways ranging from simple reflex action to complex cellular and humoral activities. An outstanding rôle in the system of defense is played by the reticulo-endothelium, because this is diffused throughout the entire organism covering most vital viscera and glands. The writer has investigated this system in different psychiatric disorders and has found a definite hypofunction of it in the cases studied. There has been improvement in function after spontaneous recovery, fever and insulin therapies. The writer has concluded that the reticulo-endothelium is instrumental in both release and cure of a psychiatric disorder.

Fourth, attention should be called to the desirability of study of psychiatric disorders which depart from the clinical phenomenon and the clinical unit, or the clinical "whole"—the syndrome. Traditionally, one defines a syndrome as a symptom-complex of a disease entity. Such a definition is not satisfactory for the studies proposed, because it assembles unrelated phenomena. For instance,

take a case of general paresis of a woman of 49 years of age who, in addition to specific serological findings and some cloudiness of sensorium, has shown unmistakable symptoms of melancholia of the involuntional type with ideas of guilt. Here, one has negative symptoms of functional deficiency, as manifested in intellectual impairment and positive symptoms, as expressed in symptoms of melancholia. The writer has previously reported an even more pronounced case of a man who maintained an expansive syndrome of general paresis for some 15 years, following which it changed definitely to a syndrome of involuntional melancholia (when the man was passing this epoch of life). The writer has, therefore, contended that in general paresis the symptoms may be rooted in: (1) structural changes of the brain (2) toxic states; (3) other constitutional elements instrumental in integration and defense of the total personality. Kraepelin expected that the various forms of general paresis could be explained by localization. This localization would concern our source one; but the expectation did not materialize because the symptoms are rooted in sources two and three (and we do not know as yet of their cerebral localization).

The writer regards the syndrome as the external exponent (symptoms) of various factors which have as their background the total personality and are rooted in changes of the internal *milieu*. It is important to appreciate that symptoms reach a certain degree of intensity and growth. Many mistakes are made in evaluating symptoms without this consideration of growth. Failure to take this into consideration frequently results in considering one and the same symptom as different phenomena because of difference in expression. Take, for instance, hypochondriacal ideas and ideas of negation. The writer's studies have convinced him that they are of the same origin. It is usually the organ which is the subject of hypochondriasis of which the existence is later denied.

In the search for clinical entities, psychiatrists make the further mistake of identifying a syndrome with an entity. By introducing the concept of the final common path of the total personality, it becomes possible to isolate fundamental clinical syndromes with the possibility of emergence of other syndromes in the future. The writer will, therefore, speak at present of psychiatric syndromes and of psychiatric aspects, as will be seen later.

IV

Next, one turns to the final common path of the total personality. The idea of this concept was prompted partly by the concept of the final common path emphasized by Sir Charles Sherrington as a neurological coordinating mechanism, partly by consideration of the organization of the total personality, and, especially, by comparative studies in various psychiatric disorders. To avoid arguments based on etiology, we may consider first the large group of mental disorders assembled in our present classification under the heading "disorders without clearly defined cause or structural change," such as the manic-depressive psychosis and dementia præcox. As the writer sees it, we observe in these disorders striking changes in affectivity. For example, one sees in the manic-depressive psychosis a heightened affect of well-being which may progress to the point of euphoria and still higher, losing itself in a state akin to delirium; but even then, there is the element of well-being present. Or there may be a feeling of dejection which may progress to melancholia and this, in turn, may culminate in stupor, still carrying with it depression. In dementia præcox, there is rigidity of affectivity and silliness, as well as other shades of inadequacy and dissociation. In hysteria, there is the affect of *belle indifférence*, etc. The trend-reaction from this standpoint is an inadequate term because the trend is a trait noticed on the surface. We now know that it is a projection of affectivity. This makes affectivity a common trait for the psychoses mentioned. The writer believes that affectivity may be considered a point of departure, even in psychoses of the so-called organic variety, as will be seen from the account of the fundamental psychiatric syndromes.

Now, let us look at affectivity from another angle. Attention is first called to the fact that we frequently use terms indiscriminately. One often hears references to affect, emotion and feeling as if to one and the same thing, which is, of course, not the case. From an evolutionary, biological viewpoint it may be assumed that affectivity has evolved from the original irritability of the cell, an irritability which may be identified as the "mental component" of the cell. Affectivity is thus the background and soil of sensibility of the living being in all its nuances. From the same viewpoint, affectivity will measure the bodily power to absorb and reflect all

stimuli. In accordance with the principle of telencephalization, affectivity in its integration goes along in harmony with the integration of the central nervous system and will be projected upon the brain. One may speak of thalamic and cortical affectivity. When fully developed, affectivity will have a certain coloring or selectivity which influences the individual's gnosis and praxis. The degree of selectivity varies with each individual. Emotions are regarded as the motor end of affectivity and are expressed on the cortical level. Feelings refer, from the same evolutionary viewpoint, to awareness and are expressed essentially on the thalamic level. They are, therefore, widespread and intense. Sensation is the reaction to a stimulus; it is not measured by intensity but by accuracy.

In the course of evolution of the original irritability of the cell to affectivity there is a stage that the writer would call "awareness." This awareness may be, on the other hand, also considered an intermediate stage in the development of consciousness. If this concept is true, then one may speak of a double concept of consciousness and affectivity, both being projected upon the brain and having common zones of adjustment. In fact, it is known that affectivity influences the width of the horizon of consciousness and that affective experiences are combined with a smaller or greater loss of consciousness.

The considerations mentioned seem to find proof in neurological studies. Here, the writer would like to call attention to the work of Head and Holmes, Herrick, Papez and others. Papez concludes, among other things, that the hypothalamus, the mammillary bodies, the anterior thalamic nuclei, the *girus cinguli*, the hippocampus and their interconnections constitute a mechanism of central elaboration of emotion; Dandy localizes the seat of consciousness along the mesial wall of the left hemisphere, a conclusion which agrees with that of Herrick. The basal ganglia appear also to have something to do with the maintenance of consciousness and affectivity.

To sum up the foregoing data on affectivity, the present writer has reached the conclusion that affectivity—which is diffused through the entire organism and projected upon the brain—represents the final common path, the coordination mechanism of the total personality. This concept allows investigation from various

angles, such as the psychological, the physiological, the neurological, the chemical. Therefore, affectivity may be regarded as a neutral basis for investigation.

V

In accepting total affectivity as the final common path of the total personality, the writer would like to outline the following psychiatric syndromes and psychiatric aspects.

A. PSYCHIATRIC SYNDROMES

1. *The syndrome of oligothymia.* Here, will be discussed the group known as psychopathic personality. The latter is rather a controversial concept; often being called in disgust a wastebasket of psychiatry. Yet, when we investigate the subject historically from the time of J. C. Pritchard to our own, we find that there is unanimous emphasis on deviation in the field of affectivity in these "psychopathic" cases. The intelligence is good or better than average. Certain authors consider the so-called genius as belonging to this group (the "creative" group of Henderson, to which the present writer takes exception). As a matter of fact, if we follow up the life record of the so-called psychopath, we can see that from earliest life onward he is rather deficient in his reactions to the challenges of life: love, work and social obligations. The writer believes that such a deficiency in reaction is due to "scarcity" of affectivity. As R. D. Gillespie puts it: "There is an abnormality of energy endowment of the individual." It is this scarcity or poverty of affectivity which is the basic characteristic of the psychopath; and, if this is true, then we can begin to clear the wastebasket. In terms of intensity of expression, poverty of affectivity will manifest itself in degrees ranging from simple immaturity to pathological immaturity. The former is demonstrated by simple personality disorders and maladjustment; the latter reaches its height of expression in such things as anti-social acts.

From the angle of energy endowment, here also belong the easily fatigued individuals, the chronic neurasthenics. However, in these cases, one must differentiate this type of neurasthenia from neurasthenic symptoms which may occur as a result of a supreme effort or prolonged strain, or as a consequence of chronic infections, etc.

Further comment in this connection will be found in discussion of the next syndrome.

In contrast to oligophrenia which denotes scarcity of intelligence, the writer proposes to label the group under discussion oligothymia. In this connection, he would like to mention that the relation of endocrines to affectivity was apparently shrewdly guessed by the ancients, since references were made by them to thymic temperament. However, the relation of the thymus to affectivity is altogether unknown, although, since the thymus is the leading gland during early life, and since the poor endowment of affectivity of the individual is also marked from early life, one may speculate on the possibility that some dyscrasia of the thymus may be responsible for the defect.

Clinically, one may differentiate subgroups of oligothymia. Depending upon the nature of the deficiency of the endowment of total affectivity and depending upon the demands made upon the totality by its constituents (impulses) in the sense of Kretschmer, there may be variety which will manifest itself predominantly in the sexual field (perversions), or in the field of social relations (crime), or in schizoid, cycloid traits, or ambivalence of affectivity, or in a generalized deficiency, as shown by chronic fatigue.

2. *The syndrome of conversion of affectivity.* This term is based on the evidence gathered from studies of hysteria. In the classical cases of solution of one's conflict by means of conversion, there is the remarkable observation of the affect of *belle indifférence*, in contrast to anxiety present before conversion, as well as that present when conversion is incomplete. We shall, therefore, speak of complete and incomplete conversion of affectivity. Conversion may be manifested in the psychological field, as in double personality or fugue, or in the somatic field, as in paralysis or blindness. The incomplete state of conversion may also be expressed in both psychological and physiological fields—for instance, certain amnesias in the psychological field and hypochondriasis in the physiological. Certain compulsive acts, providing they abolish anxiety, belong here. Otherwise, compulsive acts ought to be considered together with obsessional states.

As to anxiety hysteria, anxiety neurosis and anxiety states, the writer would like to make the following comment. It was Hecker

who, in 1893, described anxiety states as occurring in neurasthenia. In 1894, Freud separated, on a basis of etiology, anxiety neurosis which he thought to be the result of unsatisfactory sexual activity, from anxiety states; in 1908, he further separated anxiety hysteria from them—to denote symptoms of anxiety, chiefly phobias, bearing in etiology a relation to hysteria. From the standpoint of total affectivity on biological grounds, anxiety denotes apprehension of danger by the individual, essentially a sympathico-adrenal response. One cannot, therefore, speak of anxiety as of a special entity. Anxiety may be associated with hysteria, as just mentioned. It may be observed in obsessive states, oligothymias, involutional states and other conditions, such as may be seen in our so-called war neuroses. One may conclude that anxiety is a primary manifestation of the system of defense of the total personality in response to danger, to an effort, to strain, etc., depending upon the constitutional makeup. Therefore, at present, one should rather speak of anxiety states (nonspecific).

Of other types usually considered under the group of psychoneuroses, the writer would like to mention neurasthenia. The view that neurasthenia is caused by masturbation is untenable, with the exception that, from the viewpoint of energy endowment of the individual, excessive masturbatory practices may lower the energy reserve with resulting symptoms of fatigue, etc. It has been recognized already by a number of writers that neurasthenia has been stripped of usefulness as a clinical syndrome, a conclusion with which the present writer fully agrees.

As to reactive depression, the writer believes that this condition may be considered an abortive form of conversion of affectivity.

Regarding the so-called war neuroses, if one approaches them from the angle of energy and the final common path, the difficulties of their interpretation may be lessened. Certain cases will fall into line with conversion of affectivity as a constitutional peculiarity of response to difficulties. Other cases showing exhaustion of energy reserve under strain and still others, with the view of past experience, may occur in anticipation of a situation. In all cases there is a vulnerable vegetative nervous system and a vulnerable system of defense.

3. *The syndrome of projection of affectivity.* It has already been mentioned that a trend cannot be considered a primary manifestation. When one deals with a trend, it is easy to demonstrate its relation to the affective life of the individual. Thus, there is, in the trend, a projection of affectivity. From the standpoint of intensity and growth of a symptom or a mechanism, it is immaterial whether the subject who projects his difficulty still has some insight into it. In this connection, the writer would like to quote Pavlov: "Pierre Janet says that persecutory delusions and obsessions are very close to each other, and I wonder why they ever came to be completely separated. Kretschmer says that in connection with the old disputed problem of the existence of any essential difference between delusional and obsessive ideas, we can come to a precise conclusion in the negative sense."

The writer views the matter in very much the same way. He has known two cases (which are considered to be of a rare type) in which the patients showed in early life an obsessional-compulsive syndrome, later evolving into paranoid conditions. Moreover, the personality makeup of paranoid cases and obsessive-compulsive cases have approximately the same introvert traits. On the other hand, hysterics ordinarily show extrovert traits. For these reasons, the writer would include in the syndrome of projection of affectivity the compulsive-obsessive cases, with the exception of certain compulsive acts mentioned under the discussion of anxiety. Projection of affectivity may be complete or almost complete, as seen in paranoia; incomplete as manifested in other paranoid states (not including dementia præcox) and in acute hallucinosis (for details see the present writer's study on the subject); and in isolated projection (islands), as in obsessive-compulsive states. The islands of projected affectivity are apparently felt by the person as a foreign body to which he reacts with anxiety.

4. *The syndrome of dissociation of affectivity.* Little comment is necessary here, if one accepts the approach of Bleuler. Of course it will be necessary to disentangle the large group of schizophrenics from other disorders if one does accept Bleuler's view. However, as our methods of examination do not allow us to distinguish acute schizophrenias from chronic or abortive forms, the task must be postponed. It is interesting to note that the approach

from the angle of total affectivity, and from the final common path, also indicates that the primary symptoms of schizophrenia are those referable to dissociation of affectivity. The conventional subgroups of schizophrenia are accepted for the present.

5. *The syndrome of cyclothymia.* Here belong only the manic, depressive and circular phases of the manic-depressive psychosis. The writer separates agitated depressions from the manic-depressive group for reasons to be given in the next grouping. Other subgroups of the mixed type, such as akinetic mania, in the writer's opinion do not belong here, because they show definite dissociation phenomena. The so-called schizomanias, the writer would accept as transitional forms but not as a fundamental syndrome.

6. *The syndrome of mixed affectivity.* The writer has made a comparative study of cases of depression of advanced age, of which the prototype is involutional melancholia; cases of depression of early life, of which the prototype is agitated depression; and of cases of miscellaneous mental disorders which show involutional symptoms. He draws the conclusion that there is no essential difference between involutional melancholia of middle life and agitated depression of earlier life or advanced age. The present writer has described a syndrome which consists of certain well-known changes of affectivity and other symptoms (for details see his study on involution).

The writer has concluded further that in younger persons who show agitated depression there is a state of sexual crisis, suggestive of acute hypogonadism on the physiological level. If not prejudiced by the age of the patient, the differences in expression of external manifestations are due to: (1) the degree of expression of the physiological changes, which are more pronounced in middle life; (2) the workings of the system of defense of the total personality; and (3) differences in experiences of the past life of the individual. This formulation also allows one to understand the recurrences which are inherent in the possibility of both physiological and psychological exacerbations.

7. *The syndrome of suspended affectivity.* Under this heading, the writer proposes to discuss the Korsakoff syndrome. The term, "suspended affectivity," may appear difficult to accept at first. Up to the present, psychiatry has given consideration, in Korsakoff

cases, chiefly to the outstanding symptoms of disorientation, recent memory defect, anterograde amnesia and confabulations. However, if one studies the memory mechanisms (a monograph by the present writer on the subject is in press), one is likely to conclude that affectivity is an important link in the mechanism of memory and one cannot be satisfied with just registration of memory peculiarities. Formerly, it was considered that memory impairment in the Korsakoff patient was due to defect in retention. Now it is known that retention is present, but that recall is difficult. In contrast to former theories, the writer believes that recall depends to a great extent on affectivity. It is a fact that psychiatrists neglected the study of affectivity in Korsakoff cases; and the writer would like to call attention, therefore, to this generally ignored subject. In the majority of Korsakoff cases, one observes apathy and indifference, the latter at times bordering on the affect of *belle indifférence*. The Korsakoff patient is unconcerned about his condition, even when he admits that his memory is poor. Another interesting phenomenon is the one brought out by Betlheim and Hartmann and emphasized by Schilder—that a Korsakoff patient will reverse an “indecent” text read to him into a “decent” one. Above all, little attention is paid to one of the outstanding features of this syndrome, namely, the passivity and lack of inner actualization of thought, in contrast to the good response to external actualization. No doubt, inner actualization of thought depends on affectivity. It is this feature in particular which makes the writer conclude that there is a state of suspension of affectivity in the Korsakoff syndrome. This suspension of affectivity may also account for confabulations. Since the latter consist exclusively of personal data of the past of the individual and, since suspension of affectivity prevents integration of the present, the time element will suffer, and past experiences will come to the foreground in compensation, as a response to external actualization.

Perhaps there may be some indirect confirmation of this view in the findings in neurological studies. The work of Gamper, Grunthal and others has shown that we have, in Korsakoff cases, damage to the nuclei of the thalamus, the vegetative nuclei and the mammillary bodies. It may be assumed that the levels mentioned are

instrumental in the maintenance of consciousness and affectivity, thus giving weight to the concept expressed.

8. *The syndrome of blurred and chaotic affectivity.* Here, belong the confusional and delirious states. In these two conditions, there are fundamentally the same symptoms, the difference of expression lying in the degree of intensity. Since it is more profitable to evaluate a condition at its height of expression, delirium will be discussed. The essential symptoms in delirium are disorientation, chaotic thought and hallucinations. It is believed that affectivity is the background of the symptoms. Consider disorientation; it may be manifested in nonrecognition of a situation, say a place or person, which is a negative symptom; and it may be manifested in misidentification as compensation for nonrecognition, for example, by misidentifying the nurse with one's wife; this is a positive symptom. Both have their roots in affectivity. If one accepts the fact of damage to the pathways of affectivity in delirium—by any agent, toxic, traumatic, etc.—there is an explanation for disorientation, as well as for chaotic thinking. The maximum of expression of chaotic state is reached in coma. Hallucinations are the result of isolation of thought, which may occur in any disturbance of affectivity, such as dissociation.

9. *The syndrome of dissolution of affectivity (dementia).* One may take as a prototype of dementia simple deterioration in senility. Traditionally, the intellectual failure is emphasized. But Ribot has differentiated four stages in dementia. His final one describes dissolution of the personality. From a psychiatric point of view, one cannot, of course, be satisfied with a mere account of memory failure. If affectivity is considered as the absorbing power of the organism, and as a link in the memory mechanism—particularly when one notes well-preserved memory in the senile paranoid patient—it is easy to reach the conclusion that, in the beginning, failure of memory is due to difficulties in absorption which progress to the height of expression-dissolution. A comparative study in dementia has shown the writer that the differences in expression may be observed only in the beginning. When the condition is advanced, the differences are wiped out; what remain are additional factors, such as neurological findings.

B. PSYCHIATRIC ASPECTS

In addition to the fundamental syndromes described in the foregoing, clinical studies must follow lines which the writer calls the psychiatric aspects of various conditions, as follows:

Psychiatric aspects of:

Cerebral arteriosclerosis.

Senility.

Trauma.

Alcohol.

Epilepsy.

Neurosyphilis.

Other brain disease (tumor, multiple sclerosis, etc.).

Other somatic disease.

As indicated by this outline, study is recommended of the clinical subgroups of various conditions, for instance, study to evaluate the differences, if any, between delirium associated with trauma and delirium due to exhaustion. Such evaluation may give hints as to the psychosomatic aspects of a phenomenon. For example, there may be involutional aspects of general paresis, as already noted. Again, one studies the mental hygiene aspects of a given condition, its social and economic implications, etc. Above all, therapy of a given disorder is studied, with attempts at finding more specific forms of treatment, in addition to general principles.

CONCLUSIONS

It is believed that the concept of a final common path as a coordinating mechanism in neurology is also valid in psychiatry. Considering the aspects of affectivity and the concept of the total personality, it is urged that affectivity presents the final common path of the total personality. If one accepts this principle, a method of study may also be accepted which is believed to offer a neutral basis for study of psychiatric disorders. It allows one to approach a problem psychosomatically, as well as to pursue an investigation on mental lines alone. In the latter case, mental manifestations may suggest physiological changes as shown in the present writer's study on involution. Moreover, the approach discussed suggests that the release of a psychiatric disorder is caused by mul-

multiple factors, among which he distinguishes (1) those belonging to the evolution and integration of the total personality and primarily expressed in disorder of total affectivity and its constituents (impulses), a disorder which, in turn, is considered the biological background of what is known as mental conflict; (2) those belonging to the maintenance of equilibrium and rooted in the system of defense of the total personality; and (3) precipitating and aggravating factors (affective, toxic, traumatic, etc.) which overcharge the capacity of total affectivity to respond, or participate in dissolution of the total personality.

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THE NEUROPSYCHIATRIST AND MILITARY LAW

BY MAJ. JAMES A. BRUSSEL, M. C., AND LIEUT. OSCAR WEXLER, M. A. C.

I—THE PSYCHIATRIST'S VIEWPOINT

The civilian psychiatrist who becomes a military neuropsychiatrist soon discovers that his army career, as far as legal procedures are concerned, closely resembles his usual experience in court appearances; yet, there are definite and novel differences. In civil courts it is possible for the jury to be composed of individuals who may be lacking in intelligence of a higher degree. In military courts, while there is no actual jury, the board of officers acts as such; and the neuropsychiatrist can always expect to meet men of high intelligence and possessing a keener comprehension than the equivalent nonmilitary panel. There is less chance for the defense counsel to sway his listeners dramatically by inserting some twisted interpretation of psychiatric opinion.

Military personnel in army courts have, in some instances, titles that do not appear in civilian life. The presiding judge is the president of the court; the district attorney is the trial judge advocate; and one of the officers is the law member. The neuropsychiatrist finds that in a military court he has a greater latitude in giving his testimony, and—by such courtesy—is not confined to the horror of “answering by a simple yes or no.” It is not uncommon in civil courts to find one attorney ready to belittle his opponent’s psychiatrist both as to professional standing and/or scientific opinion. In the army, the neuropsychiatrist—by virtue of his accredited military assignment of diagnosing and caring for mental and nervous diseases—automatically commands the respect of both defense counsel and trial judge advocate. The hospital neuropsychiatrist who is furnished by the post commander as expert witness in questions involving possible mental pathology usually has his qualifications accepted as a foregone conclusion.

The supreme question which dominates all psychiatric testimony in military courts is “mental responsibility.” Rightfully, the non-professional officers trying a prisoner are not interested in the diagnosis, *per se*, but in whether the defendant recognizes right from wrong and is aware of the nature of his act. For the psychiatrist

there is, in a majority of cases, a handicap of adjudging such a situation in retrospect. He will be asked to determine, not only if the accused is mentally responsible now, but at the time, for example, that he deserted, which may be a matter of months in the past. A psychotic prisoner whose anamnesis as gathered by the Red Cross, clearly establishes his insanity as antedating military service, cannot be regarded as "mentally responsible," no matter how "clear, alert and normal" other witnesses may testify the defendant to have been at that particular time. The trial judge advocate will, quite readily, in certain cases of psychoses, ask the expert witness if it is not possible for the patient at the time of the commission of a crime to have been in a state of remission so far as the mental condition is concerned. So-called "clear intervals" are extremely common in the psychoses characterized by emotional changes, and these mental syndromes are typically characterized by periodicity of attacks. However, the psychiatrist must point out that regardless of the soldier's clearness of cerebration and his rapport with environment during a remission, his mentation springs from psychological processes that are basically distorted to the extent that the psyche requires a mental disease as a solution for the basic, inner, unconscious conflict. As a result, it becomes extremely difficult to hold an individual criminally liable for an offense committed at a time after the unquestionable establishment of an antedating mental illness reasonably within the recent past. There is usually little difficulty encountered in convincing a court of this fact.

While it is recognized that drunkenness cannot be pleaded as a defense excepting in those crimes requiring a specific intent, the psychiatrist may be called upon to render an opinion in the case of a soldier originally intoxicated at the time of the commission of a crime. On this subject the Manual of Courts Martial, 1928, states: "It is a general rule of law that voluntary drunkenness, whether caused by liquors or drugs, is not an excuse for crime committed while in that condition; but it may be considered as affecting mental capacity to entertain a specific intent, where such intent is a necessary element of the offense. Such evidence should be carefully scrutinized, as drunkenness is easily simulated or may have been resorted to for the purpose of stimulating the nerves to the point of committing the act."

Nevertheless, the psychiatrist may be asked the question "Was he so influenced by alcohol that he was not aware of what he was doing?" It is the writers' contention that no man, specialist or not, can estimate in retrospect the correct answer. Individuals vary in their response to ethylation. The pathologically intoxicated person may be moved to homicide by one drink, while another man may remain in good contact after the consumption of two quarts of whiskey. Again, the same individual on one occasion may be the devil incarnate when drunk, and the next time as calm as a docile child. No matter how convinced the psychiatrist may be in his examination (prior to appearing in court) of the prisoner as to the latter's sincerity and honesty as he fervently avers, "Sir, I don't know what happened . . . I don't remember anything . . . I guess I was too stewed" . . . the specialist can only render an opinion, (and should classify it as such) that "it is possible the defendant was so influenced by whiskey he did not realize what he was doing." But no such didactic statement can be made, for example, as that "I believe the prisoner was so intoxicated he was not aware of or accountable for his actions at the time."

Similarly, there is a certain difficulty encountered in adjudging a nonpsychotic mental defective. Psychiatrists know that it is impossible to lay down any arbitrary rule that below a certain mental age an individual is not mentally responsible. Too commonly, do we see an *idiot savant* with a mental age of six years who recognizes right from wrong and is aware of the nature and consequences of his act, while to the contrary, a moron of nine years may be devoid of all mental responsibility. Each mental defective is a case unto himself; and the neuropsychiatrist, in his clinical examination, determines the status of responsibility prior to appearance in court.

The trial judge advocate can easily becloud the issue by his question: "Do you believe the accused knows it is wrong to commit murder?" The psychiatrist's salvation lies in the defense counsel's pursuing such question to enable the expert to explain fully this ambiguous verb "know." The specialist should be able to explain to the court that "to know" may mean "to recognize" and "to be aware of." The prisoner may "be aware" of society's rule that murder is a crime, but his impaired intelligence and his ill-constructed ego-system may not "recognize it." It has always been

the writers' practice in such instances to warn the defense counsel ahead of time to have the neuropsychiatrist carefully explain this fine difference to the court. In the army, also, it is not unusual to encounter what the French term the *idiot savant*, i. e., the mental defective who has one or more special attributes enabling him to compete in certain fields with his normal fellowman. In a recent case, one of the writers (the neuropsychiatrist) was asked by the trial judge advocate to "explain how the accused who is diagnosed as an irresponsible mental defective was able, despite such a classification, to service automobile engines better than any other man in his company." The calm and experienced physician should have no trouble in explaining this paradox to the court, depending on how clearly, concisely and plainly he delineates his clinical material.

The writers have encountered, from time to time, trial judge advocates who are familiar with practical psychology. One, they recall, confounded a psychiatrist by having the latter admit a mental age had been established by using the Kent psychometric procedure and then forcing the specialist to admit further that this test was extremely crude and unreliable. Another confused an expert witness by having him describe the differences between the Binet-Simon and the Wechsler methods.

One of the most frequent proceedings at which the neuropsychiatrist will testify is a "Section VIII board," a board of officers, convened, pursuant to the provisions of Sec. VIII, AR, 615-360 (Ineptness, traits of character, etc.), with functions which will be delineated later. While this is not a formal court, the status of the specialist is approximately the same, especially in regard to his testimony. It is more informal than a court-martial, there are no attorneys, *per se*, but the neuropsychiatrist must be just as careful in giving his decision. Little friction between himself and other officers will be encountered, for the line officers who have initiated Section VIII proceedings have previously recognized the soldier's inaptitude or other character traits which render him unsuitable for military service, and are extremely anxious to maintain a high military level in their units. Hence, the chronic alcoholic and the nonpsychotic but mentally responsible mental defective are quickly disposed of. There are, however, some strict reservations established by the army in dealing with the drug addict and the homosexual.

The mere declarations of the latter two are insufficient evidence on which to base decisions. In the case of the drug addict, open apprehension while taking the drug, or written evidence of the soldier's narcotic officer at his home district that the accused is an addict known to federal authorities, or physical indications such as needle marks, are required. Even so-called withdrawal symptoms may be successfully simulated by the consummate actor; and a soldier carrying a supply of narcotics does not establish his identity as an addict. But the physical findings, such as pupillary changes, dermatitic reactions, etc., cannot be feigned. The writers have usually been able to discover that established drug addicts have other characteristics which indicate the basic psychopathology, i. e., constitutional psychopathic state (psychopathic personality). The addict will usually have been absent without leave on various occasions, will have clashed with the military police while in the army, and with the civil police during his civilian career; will have been unable to hold a job for any appreciable time, etc.

Homosexuality often is a problem in its legal aspects. Regardless of how marked a soldier's feminine characteristics and mannerisms may be, or of how sincere his admission to homoerotic practices, apprehension while committing the act or circumstances involving such an accusation under the conditions as outlined by the 96th Article of War, written corroboration from reliable military or civilian sources, ordinarily are required. Solution of this problem resolves itself into: (1) Where perverted sexual proclivities are substantiated by unquestionable evidence, the soldier should be referred to a Section VIII Board for a Section VIII discharge, or (2) Where a soldier has been apprehended in the commission of any perverted act, he may become eligible for court-martial under the 93rd or the 96th Article of War. (See War Department Circular 3, 3 Jan., 1944.)

There are various other legal angles to the daily activity of an army neuropsychiatrist which are not confined to the formal court or board room. There is the C. D. D. (Certificate of Disability Discharge, Form No. 40, W. D. A. G. O.) in which the neuropsychiatrist must exercise great care in his statements. Pat, glib and arbitrary phrases cannot apply to all schizophrenics, or to all manic-depressives. If the specialist recommends that a patient be dis-

charged to a reputable institution for further care, rather than to the care and custody of his family, he should not state the soldier is "homicidal and suicidal" or "dangerous to himself and/or others" if the subject has never manifested such tendencies. But no one will argue with a specialist if he states the patient is "potentially homicidal or suicidal" or "potentially dangerous to himself and/or others," on the grounds that the actions of any psychotic person are not predictable. This phraseology is currently in use in the completion of the W. D. A. G. O. Form 40, Certificate of Disability for Discharge, at the Station Hospital, Fort Dix, New Jersey, in submitting such paper to higher authority. An example of this "potentially homicidal or suicidal" case is found in the so-called homosexual panic, arising from ill-repressed homoerotic impulses which, when projected into reality, may lead to impulsive, unheralded, and sudden homicidal assault. This is very often encountered in the catatonic form of schizophrenia. The same psychological process in the depressed individual, while actually homicide of the parent in the unconscious, may result in sudden suicide of the patient himself in reality.

Again, great care must be observed in establishing the "Line of Duty" status of a soldier's mental disorder. The army carefully directs that in the determining of the existence of a mental disease prior to entrance into military service, consideration will be given to military records, the medical history, and the usual clinical and pathological course of the condition in question. Psychiatrists are cautioned that many chronic diseases and degenerative conditions manifest symptoms only after many months or even years, and that in such conditions any composite difficulties may arise as a natural consequence of the disease and not as the logical incident or probable effect of duty in the service. Therefore, after careful consideration of all the evidence, medical judgment may be such as to warrant a finding that the mental syndrome had its inception prior to entry into the service and the "Line of Duty" entry is recorded accordingly.

Line of duty status in psychiatric conditions has been carefully delineated in a recent circular, (WAR DEPARTMENT Circular No. 205, 24 May 1944). Paragraph 1 i (6) states:

Psychiatric cases.

(a) *In line of duty.*—The following cases will be considered to be in line of duty irrespective of length of service:

1. Cases of schizophrenia, manic-depressive psychosis, psychoses of similar nature, and psychoneurosis occurring in individuals in whom no mental disorder existed prior to entry into service.
2. Cases of schizophrenia, manic-depressive psychosis, psychoses of similar nature, and psychoneurosis occurring in individuals in whom predisposition to these diseases, but not the actual disease itself existed prior to entry in the service. Neurotic traits in themselves will not be regarded as necessarily indicating the presence of psychoneurosis.
3. Cases of psychoneurosis occurring in individuals in whom psychoneurosis existed prior to entry into the service, but where available evidence clearly indicates that the psychoneurosis has been permanently aggravated by the service.

(b) *Not in line of duty.*—The following cases will be considered to be not in line of duty: cases of schizophrenia, manic-depressive psychosis, psychoses of similar nature, and psychoneurosis where available evidence clearly indicates the existence of the disease prior to entry into the service, and that the disease was not aggravated by the service.

But a psychotic individual's declaration that he has "heard voices ever since he was in grammar school" is not acceptable because an insane person is not mentally responsible. In the latter case, substantiation of line of duty "no" status must be based upon medical opinion or from a Red Cross social history, from an anamnesis obtained from a member of the patient's family, or from some civilian institution, clinic, agency, or reliable person such as a family physician.

The circular just mentioned also specifies those conditions in which the line of duty status is "no" and the method of recording same, in paragraph "j," which is summarized as follows:

1. Those conditions arising from misconduct. In the case where venereal disease is the precipitating factor and hospitalization occurs within 1 year of appearance of initial symptoms, the line of duty status is recorded as: "No, AR 35-1440"; if hospitalization occurs more than 1 year after appearance of initial symptoms, the line of duty status is recorded as "No, AW 107" (applicable to enlisted personnel only).

2. Those conditions occurring during absence from duty without permission, provided no misconduct was involved. Line of duty is recorded as "no."
3. Those conditions occurring while pursuing a private avocation or business not of a class specifically authorized or encouraged by the War Department, provided no misconduct was involved.
4. Those conditions which grew out of relations unconnected with the service, provided no misconduct was involved. Line of duty recorded as "no."
5. Those conditions which existed prior to active service and were not aggravated by the service (EPTS). Line of duty recorded as "No, EPTS."

The army neuropsychiatrist should, therefore, acquaint himself with military law and legal procedures, confine his statements, oral and written, to simple, straightforward language, and to have substantiation in acceptable form for his diagnosis, and opinion; and when such corroboration is lacking, to express his opinions as such, and not as positive findings beyond the reach of refutation.

II—THE LAWYER'S VIEWPOINT

Fundamentally, the system of military law parallels the civilian law pattern. The terminology of the various courts, of the constituents of such courts, or of the participants may vary from those of the civilian legal design, but fundamentally the courts martial system and the Articles of War are a combination of the common law and the code systems adopted by the majority of the states.

The question often arises in military law, as well as in civil law, as to what part psychiatry, sociology, psychology and associated sciences should play in the determination of the punishment, if any, to be meted out. The military have not been concise on the question of just where responsibility should begin and end where mental illness is either interposed as a defense or is submitted by an investigating officer as a reason for not prosecuting the charges which are pending. As in the civilian jurisdiction, the value of the various tests used by the psychiatrist in determining the ability to assume mental responsibility for a crime is often open to criticism by those who are unacquainted with the use and determination of such examinations. However, while both the prosecution and the defense in civilian practice may introduce expert witnesses, and the same is

true in military jurisprudence, it is a very rare case when one psychiatrist is called upon to contradict the testimony of another in a trial by court martial.

The newcomer to the army often questions the efficacy of military law. Many is the recruit who has felt, after witnessing or hearing of a court martial, that the "cards are stacked" against the accused. To those who are unfamiliar with the functioning of the military legal system, this is a logical conclusion, because, unlike civilian law where the usual percentage of convictions runs between 50 and 60, a much larger percentage of military charges results in convictions. The explanation is obvious for this high rate to anyone who studies the courts martial system. Once charges are drawn up and submitted, they are referred to an investigating officer whose duty it is to determine the justification of the charges, their validity, and the good faith of the accuser. He also determines the sufficiency of the charges; if the question arises, the competency of the accused; and whether sufficient evidence exists to support the charges. If after this investigation, this officer is convinced as to the adequacy of the facts, that is, that at least a *prima facie* case exists, he will advise that the case be referred to trial. If on the other hand, it is found by this officer that a *prima facie* case does not exist, or that the case may be dealt with adequately without resorting to trial, or that the charges are in any way not well founded, the person preferring the charges is open to censure, and a course of action other than trial is recommended. While the writers are not personally aware of any case where the individual preferring charges was censured, it is, nevertheless, technically possible to invoke such a procedure. The purpose of such complete investigation is obvious. The military are interested in running as efficient an organization as possible, in maintaining discipline with the least amount of prodding. The purpose of the army is to direct all efforts toward defeating the enemy on the battlefield, and the military hardly have time, especially during a war, to waste time needlessly on preparation of charges, trial and possible arrest and confinement of an innocent soldier, when he might be used to a better advantage in training or in battle. The result of this complete set of "checks" and "balances" has been that an accuser, rather than leave himself open to criticism and possible reprobation

tion is much more careful in instituting charges than the ordinary lawyer is in bringing a criminal proceeding in a civilian court.

Another frequent complaint of the "rookie" is that the punishment usually fits more than the crime—that is, that the sentence in military law is usually more severe than that for a similar crime in civil law. Again, the answer is the obvious one originating from the facts that the army is trying to maintain a highly-disciplined organization and that the purpose of the courts martial system and the Articles of War is not merely to punish the offender for the crime he has committed, but is rather to make the penalty of such a severe degree as to discourage the soldier or others from committing such acts as are specifically prohibited by the Articles of War or will otherwise bring discredit upon the service. The purpose of military law is not to set up a penal system with minor punishments which would encourage the "constitutional psychopath" to commit petty or more severe offenses in order to obtain a "vacation" in the local guardhouse. Military law is also designed to prevent those bordering on this psychopathic state from being encouraged to become consistent trouble-makers in order to seek refuge from the task of training, and as a means of shirking the dangers of combat.

While there has been some indecision regarding the extent to which mental illness shall be a criterion for excusing a man for his crimes, the military service more or less, follows the tests set up in civilian law. Mental illness or disease in itself does not constitute an exemption from criminal liability. To constitute an adequate defense of insanity, it must be shown that the defendant did not comprehend the nature, the quality, or the consequences of his act, and that he could not distinguish right from wrong at the time of commission of the crime. In many cases, the defense counsel or trial judge advocate has unwittingly attempted to have charges dismissed in the case of the neurotic defendant, only to have the foregoing two tests applied, and then, on the prisoner's failure to meet these requirements, having him forced to stand trial. The defense of insanity, however, is probably more common in military law than in civilian law at present, first because the present day army is much more conscious of the ability of the psychiatrist to determine such criteria as those for legal insanity, and second because of

the ready accessibility of men specially qualified in determining mental illness, without the necessity of subpoena and the fees of the expert witness.

The basic problem after the neuropsychiatrist has completed his clinical work-up and diagnosis (assuming of course that the soldier is unfit for further military duty) is one of administration in the proper disposition of the patient. The neurotic and the "constitutional psychopath" do not fall within the troublesome categories. In the former case, if the charges have been set aside by competent authority, certificate of discharge for disability proceedings are completed, and the soldier is released from the army to his own custody and is free to proceed to his home. In the case of the "constitutional psychopath," if no charges are pending, a recommendation is made to the commanding officer of the organization of which the man is a member that he be disposed of under the provision of Section VIII, AR 615-360. The commanding officer then prepares the case, based on the findings of his own investigating officer, and submits the recommendations based on such findings to higher authority for further action.

The situation, therefore, resolves itself primarily into the disposal of the psychotic soldier and the "not mentally responsible" mental defective. Under the pertinent regulations these patients, after being declared insane by a board of two or more medical officers, are divided into four distinct classes: (1) those who are entitled to further hospitalization, after discharge from the army, by the Veterans' Administration; (2) those who may be released to the custody of the nearest relatives; (3) those who should be referred for further treatment by civil authorities and agencies; and (4) those whose further care cannot be provided by any of the foregoing and who thus must be institutionalized at government expense. It is the last classification which is of particular interest for the purpose of this discussion. These cases are dealt with by an Army Commitment Board which in many respects is similar to a hearing for the judicial declaration of insanity in civilian jurisprudence. Here a board of three officers (two being medical officers, and of these one a neuropsychiatrist) meets to consider all available medical evidence and to decide whether the soldier is insane and should be committed to Saint Elizabeths Hospital or some

other reputable institution. The patient is assigned a defense counsel to protect his interests. To refute the medical evidence, this counsel may introduce whatever witnesses or evidence he may see fit, to assist the patient, who may, if he chooses, be represented by civilian counsel or call in other psychiatrists to refute the evidence presented. The board session is held in open hearing, and is conducted in the same manner as a court hearing, and it is necessary that a *prima facie* case of insanity be proven before commitment may be secured.

Where, however, the patient is an absentee (i. e., has been absent without leave), if he is mentally responsible and is capable of distinguishing between right and wrong and also of forming the intent which is an essential element of the offense of desertion, even though he is diagnosed as a mental deficient or as a constitutional psychopath, the officer exercising appropriate general court martial jurisdiction may order his discharge from the service under the provisions of Sec. VII of AR 615-360, and Paragraph 21c of AR 615-300, for physical unfitness and desertion, regardless of the applicability of the statute of limitations. The man will be given a blue discharge (without honor). Again, one sees the intent of military jurisprudence, to be reasonably severe in not allowing a man to justify his misdoings on the basis of physical disqualification, and thus escape punishment. In the same manner, others are forewarned of the consequences of their act, were they to go absent without leave and, upon apprehension and trial, plead physical disability as a defense or in mitigation of sentence.

Another semi-judicial procedure, peculiar to the military system is the Section VIII Board. This board is convened to determine whether a soldier: (1) is inapt; (2) does not possess the required degree of adaptability for the military service after various attempts to rehabilitate the man by reclassification and reassignment have failed; (3) has habits or traits of character which render his retention in the service undesirable, and rehabilitation is not considered feasible; or (4) is disqualified for further service physically or morally through his own misconduct, and cannot be rehabilitated without detriment to the morale and efficiency of his organization. The hearing and proceedings in such cases closely follow the rules of evidence and procedure for courts martial with one exception—

that is that the members of this board are not sworn. In this category of disposition falls the constitutional psychopath, the "mentally responsible" mental defective, the chronic alcoholic, the drug addict, and the sexual pervert. Here the psychiatrist is again called in as an expert witness to express his opinion as to the diagnosis, prognosis and advisability of attempts at rehabilitation. The specialist who appears before a Section VIII Board finds it easier to express himself since the proceedings are more informal in nature than the other proceedings mentioned previously.

SUMMARY

1. The neuropsychiatrist and his rôle in army legal procedures have been discussed from the viewpoint of the specialist and the attorney.

2. The military psychiatrist who serves as an expert witness in courts martial and military board proceedings and who wishes to avoid embarrassment should acquaint himself with the Army Regulations, Articles of War, and courts martial procedures pertaining to such subjects.

3. The specialist in mental diseases should confine his testimony, when it is an expression of his own, personal, clinical opinion, to a "belief" and not offer it as scientifically established, didactic fact; using simple, straightforward language which laymen can easily comprehend.

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TYPES OF SEQUENCE IN HUMAN BEHAVIOR*

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The subject of the present discussion is admittedly difficult. It is so, largely because it has been little considered. As everybody knows there are certain things, such as gravity and the circulation of blood, which have enjoyed a great deal of attention over a considerable period of time. On such matters it is easy to write, for there already exists, concerning them, some knowledge and a certain common agreement. Of still greater importance is the fact that they have been recognized as constituting fields for inquiry. They have graduated to the status of problems and no longer pass along through our daily experiences as things to be taken for granted, or as part of the undifferentiated background of the business of living.

Among those matters commonly taken for granted, are those large premises and assumptions concerning the nature of things which constitute the world image characteristic of our culture. Until recently, these changed so slowly that we did not take them into our reckoning when considering problems of human behavior. Indeed, since they rarely showed appreciable progression within the lifetime of the individual worker, their very existence as variables was not understood. For great periods of time, it was unnecessary to consider, in the practical affairs of life, the effects of the rotation of the earth. It was only when transportation became rapid and when we became able to fire projectiles for considerable distances that what had hitherto been part of the background of our daily living took on the status of a matter requiring special consideration, at least under certain circumstances.

The same conclusions are now true of our general assumptions concerning the behavior of living things. Two events have occurred. There has been a great acceleration of social change, so that customs and institutions formerly regarded as all but permanent may be seen to evolve within our lifetimes, often within a decade. Moreover, our studies have passed beyond the preliminary identification of surface differences in behavior and are beginning

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to approach the underlying cultural texture on which these patterns have been spread.

For these reasons, it is becoming necessary to consider certain of these larger assumptions. Those presently under discussion concern the types of sequences in human behavior.

It is generally agreed that most considerable progress has been made in therapeutics in psychiatry during the last two or three decades. Part of this progress has been due to specific advances—psychotherapy, fever therapy and shock treatments—part has been due to a series of vastly significant changes in public opinion which have permitted these advances to be utilized adequately.

But though therapeutic progress has been great, knowledge concerning the nature of the conditions with which the therapists are dealing has been very little expanded. Despite the immense amount of work done on the “shock” and other chemical therapies, very little more is known about the schizophrenias than was known prior to the introduction by Sakel of the insulin hypoglycemia treatment.

If one looks critically at the attempts currently being made to understand how some of the major behavioral deviations are brought about, he must be struck with the fact that, almost without exception, the investigators are concerned with only part of the problem.

The remainder of the problem is taken for granted—it has already been disposed of and settled. The investigator is certainly very interested in causal factors, in motivations and incentives. He keeps his concepts concerning these in that fluid, constantly fermenting form which is the very matrix from which knowledge flourishes out. The matter of causal relations—the ways in which behavioral sequences, once initiated, progress, is dealt with very differently. Almost inevitably the investigator puts those in the “fixed” category of his experiments. They are the circumstances surrounding his inquiry, but they do not enter into the central ferment from which will come his new concepts.

Yet this problem of the ways in which behavioral sequences unroll themselves is of immense importance and may indeed contain some of the answers to those matters concerning which we have made very little progress for several decades.

While there has been success in working out procedures which are useful in certain types of reaction, and while it is possible to recognize these reactions with increasing accuracy, general knowledge is extremely limited. The investigators are only in the foothills of those towering problems concerning the reasons why the form of reaction to stress should be different in different organisms, concerning many of the factors which bring a reaction once initiated to a termination, and concerning the way in which the therapies employed act to change the direction of these progressions.

Before considering in detail the various types of behavioral sequences which have been discovered up until now, it is wise to be sure one clearly understands what is meant by this term, and, in particular, is able to separate it out from such terms as "motivation," "incentive" and "causal factors." By these last three, are meant those conditions and situations which seem capable of initiating a reaction in a human being. Clearly, there is a very great number of these factors, and this number is added to by the fact that situations which at one time produce no reaction in the individual will do so at another, depending upon changes in the responsiveness and adaptation of the individual. Likewise, there is a considerable though lesser number of possible reactions which the individual may demonstrate.

The kinds of sequence which exist between these two—between the situation which elicits the response in the individual and the reaction which he finally shows—are however, much fewer. Perhaps it would be sound to say that those of which one knows are few.

Though specific reference has been made to causes, motives and incentives, they are mentioned with the intent to reserve the right to question, at some later time, their values as working concepts. Whether the invasion by the tubercle bacillus should be considered the cause in a given case of tuberculosis, or whether the presence of the individual from whom the infection was transferred, or the circumstances which brought the two individuals together, or the inadequate diet, or the overwork, or the possible constitutional factor which rendered the person susceptible to infection should be considered the cause, depends upon the intention with which one

approaches the matter. Indeed, it is possible to abandon the concept of causation altogether and to set up a working hypothesis of some utility in terms of sequences passing forward in time and interacting with each other. It may be said that one selects certain links or phases in such sequences to work on. In doing so, he designates them as causes, motivations or incentives. It may further be maintained that one tends to do this because of the difficulty in working with unlimited variables. This is an example of a characteristic of human behavior, namely, to economize by exclusion even if that means over-simplifying. However, for the purposes of the present discussion, it is unnecessary to do more than state the existence of this problem. The matter under consideration, while related, is not identical.

It is hardly necessary to stress the importance of understanding the nature of the various types of behavioral sequence; and, indeed, the therapeutic and practical importance of that understanding will emerge when one comes to consider each type separately later in this discussion.

The following general statement may, however, be made. In attempts to control and modify undesirable deviations from normal behavior, it is fundamental to know in what manner these deviations are proceeding, for it is essentially by interfering with a chain of causal events that one achieves preventive and therapeutic purposes. Successful treatment is successful interference with the behavioral sequence; and, if therapy is to be more than empiric, knowledge of the kind of linkage is necessary.

DETERMINISM

The first type of behavioral sequence to be discussed, namely, determinism, is the most controversial. It found its origin in the physical sciences, grew to its full stature as a working concept with the early flourishing of the experimental method in this field and was naturally transferred to the biological sciences when those first became organized. As a working concept it was, at least initially, extremely useful in guiding the development of such sciences as that of bacteriology, and indeed can be seen most beautifully expressed in Koch's Postulates:

1. The organism must be found in the tissues or fluids of the affected organism.
2. It must be isolated and cultivated outside the body for several generations.
3. The cultivated organism on inoculation into a suitable animal should reproduce disease.
4. It should be again isolated from the artificially infected animal.

As a counter-balance to this, it must be said that the very success of determinism in this field led to endless confusion and delay in the development of biological and psychobiological fields, in which it was not applicable but to which it was most naturally transferred. To the erroneous use of this concept, must be ascribed a fair share of disappointment attendant upon attempts to modify human behavior by endocrinological preparations.

It becomes later apparent moreover, that the fundamental postulates of determinism—similar causes produce similar effects and effects are proportionate to their causes—could not be maintained, at least with respect to the more highly evolved organisms which showed well-developed capacities for adaptation and in which for that reason similar causes must show dissimilar effects, depending upon the varying degrees of adaptation of the organisms to repeated applications of the same cause. To meet this, and to meet what has more recently been realized, namely, that even within the physical sciences a theory of rigid determinism was inadequate to account for all the facts, the concept of probability has been advanced.

More recently Brown (1932) has introduced a still further modification. He suggests replacing traditional determinism by two concepts—modal-determinism and event-determinism. By the first he means the probability that a thing under similar circumstances will react in more or less the same way, not identically but at least in forms which are recognizable as belonging to the same family. By event-determinism, he means something which he considers to occur much less frequently, namely, the recurrence of the same conditions which evoked the first reaction. One may say that there is a reasonable possibility that the injection of a stated amount of

adrenalin into the same individual will produce at any time during a period of 10 years, reactions which are recognizable as being related to each other. The probability that the injection will be given under precisely the same circumstances is considerably less.

The deterministic concept of causal relationship however, even in modified form, is only valid with reference to certain activities of the least differentiated organisms and with reference to those aspects of the higher organisms which do not show adaptation or in which adaptation proceeds extremely slowly. For instance, in higher organisms the sequence of events in the convulsive reaction reveals a certain consistency in a given individual.

It is interesting to note however, to what extent even the simplest organism will show deviations from a deterministic system of causation. This is well illustrated by the experiments of Jennings (1906) who reported on the behavior of such a simple organism as *Stentor*. This trumpet-shaped infusorium is covered with longitudinal rows of fine cilia and has a circle of larger cilia around its terminal disc, upon which its mouth is placed. The cilia, when active, drive a current of water on to the surface of the disc and in this way the animal obtains its food supply. Jennings found that on bringing into the ingoing stream of water a cloud of carmine particles, a series of interesting reactions took place. For a short time the animal accepted the particles; then it attempted to avoid them by turning its body to one side. If this maneuver was not successful, the animal then suddenly reversed the direction of movement of its cilia so that the particles were driven away. This, however, was only momentarily; and if they still continued to fall on the disc, the animal retracted into its tube. The further sequence of events is of particular interest because it was demonstrated that if on re-expanding and setting its cilia in motion again, the *Stentor* found that the particles were still falling, it did not go through the first maneuver again, namely, the bending to one side and the reversing of the direction of motion of the cilia, but it at once contracted sharply into its tube. Each time it re-expanded and found the carmine particles still falling it contracted more speedily and finally, if the fall of particles was continued, the *Stentor* eventually broke its attachment with its tube and swam away to another location.

This provides a very excellent example of the fact that similar causes do not produce similar effects, with respect to all the aspects of the activity of living organisms.

ORGANICISM

In part, this deviation from a deterministic type of sequential relationship referred to above is due to what we will describe as the next form of relationship, namely, that of organicism. Though such relationships are present, both in the physical and in the biologic fields, workers soon realized that all the aspects of the behavior of even the simplest organisms could not be explained on a rigid deterministic basis. It was necessary to account for such phenomena—those in which the resultant of the interaction of two factors might be quite inexplicable in terms of properties of either. The simplest example of this is the production of water from oxygen and hydrogen. It is also necessary to explain the fact that even the protozoa will show different reactions to the same stimulus, depending upon the past history of the organism.

It was recognized, moreover, that under certain circumstances organisms tended to react as a whole to a stimulus, that the reaction was not rigidly predictable since the organism was conceived of as undergoing continuous adaptation but that some limitation was placed upon the possible range of adaptations since the evolutionary process must have eliminated those types of organisms which tended to produce reactions endangering their own existence. The kinship of these reactions to those of "wholism" and Gestalt which appeared later is apparent.

It is extremely important to grasp the significance of this type of causal relationship. Much of the thinking of those who approach psychiatry and psychology is rendered quite sterile by reason of the fact that attempts were made to see one-to-one mechanical relationships where they actually do not exist.

That event which must have occurred an enormous span of years back from us and which allowed those earliest organisms diversity of response to the same stimulus was of really epochal significance. Without it, life could not have passed forward out of the most elementary stages; adaptation and evolution would have been impossible.

AUTONOMY

A third type of sequential relationship is demonstrated in the development of the autonomous reaction. Under certain conditions, a reaction initiated under a certain set of circumstances, which may be termed causal, loses all connection with them but is perpetuated by factors inherent in its nature.

Various statements have been coined to express this in more vivid terms. Woodworth (1918) talked about mechanisms being converted into drives. Stern (1935) referred to phenomotives being genomotives. Allport (1937) has amended Woodworth's statement and declared that only those mechanisms that are not properly mastered may become drives. He refers to them as mechanisms on the make.

In the present writer's work he has defined autonomy rather differently. From studies of anxiety, the concept of autonomy has been developed as a self-perpetuating system in which the activating factors are not those which initiated it, and in which there is not a progression to something else. For instance, rheumatic fever which has led to endocarditis and later to cardiac decompensation and still later to a hypostatic pneumonia, is a system in which the primary factor, namely, the rheumatic fever, is not of necessity still active. It is, however, a progressive and not an autonomous system. The autonomy which is seen in certain kinds of anxiety state is truly self-perpetuating in that it is no longer influenced by the original factors but is continued by daily living; although it may grow less or more severe, it does not show progression to something else (Cameron, 1944). Kubie (1943) has recently referred to what he terms structuralization of behavioral responses. By this he means that though the behavioral reaction may have been initiated by psychological experiences, in certain cases biochemical and physiological changes occur which prevent the correction of the behavior by purely psychological means.

ASSOCIATIONISM

The fourth type of sequential relationship is that of associationism. This concept of behavioral sequences based upon the assertion that those events which have once occurred in association with each other, often tend to develop a causal relationship to each other

was set up comparatively early in the history of human thought. Aristotle defined some of the laws of association of remembered images.

Locke in 1700 first gave the concept its present name in the fourth edition of his "Essay Concerning Human Behavior." Since that time, considerable work has been done upon associationism, and its concepts have formed the basis for numerous developments in the social sciences. Among these may be mentioned the production by C. G. Jung of the word-association procedure and the use which has been made by the psychoanalytic school of the basic concepts. As recently stated (Warren, 1921), the laws of association are:

Contiguity: An experience tends to recall other experiences which occurred in close temporal and spatial proximity to it.

Similarity: An experience tends to recall experiences which resemble it.

The strength of the association depends upon: (1) the original intensity, (2) repetition, (3) hedonic accompaniment, (4) the current psychosomatic status of the individual, including his heredity.

It will be readily grasped that the whole sphere of conditioned reflex work is actually based upon an elaboration of the law of contiguity. The essential concepts in conditioning are: (1) Where events affecting the living organism occur contemporaneously, the less potent tends to acquire for the organism the significance of the more potent; (2) Where the less potent occurs repeatedly without the occurrence of the more potent, that significance becomes lost.

Associationism, at least in the form of conditioning, is a type of behavioral sequence which appears very early in the phylogenetic series. It can be demonstrated in the simplest mammals and in fish, and there are a few reports that it has been possible to establish conditioned responses in the protozoa.

"X"-SEQUENCES

The foregoing description of these types of behavioral sequence—of the various ways in which reactions may be articulated—is clearly incomplete. Reference to everyday life will at once reveal instances of behavior which cannot be readily understood on the basis of any of the four concepts which have been described.

At present, it is not possible to state in definite terms the nature of these other types of behavioral sequence. One may, however, describe some of the kinds of behavior for which explanation must be sought. First, it may be said that the first three concepts are valid without the organism necessarily being conscious. There is, moreover, some question of the fourth type of sequence namely, that dependent upon associationism, which may also, at least in certain respects, be carried out without the organism being conscious.

The second general statement is justified, namely, that the types of sequence described are concerned mainly with present situations. They arise when a drug is given to the individual, when he is put under stress or when he is exposed to a situation which arouses a conditioned response in him. This, however, does not account for those reactions which, while initiated by a present situation, are related to the future—it does not account for such matters as solving a puzzle or planning an action, to be carried out a few minutes or hours later, those reactions which call for the setting up of a goal. Here the sequence appears to be carried along both by tension and by the need to get relief by making the imaged goal and consummation coincide.

DISCUSSION

Thus far, the aim has been toward defining the types of behavioral sequence of which there is present knowledge and toward indicating at what level in the phylogenetic series they appear.

It is desirable next to consider the extent to which the various types may be present in the human organism. At the outset, one should free his mind from preconceived convictions upon the matter, and in particular from conviction that human behavior is to be described exclusively on the basis of any one sequence. It is a fault in many new concepts in the psychiatric field that their originators apparently feel that they are destined to a do-or-die existence. Either these concepts must drive out all other conceptions of the same matter, or they themselves must perish. Cooperative living among allied concepts is still struggling for existence.

Nevertheless, if one surveys the range of human behavior with an unprejudiced eye, it is perfectly possible to see that all five types

of behavioral sequence can be identified and that there is some general relationship between the level of behavior and the kind of sequence.

Those sequences which show the least day to day modification and which show a great deal of similarity from one organism to the next, can be demonstrated as conforming to the deterministic type of sequence. The same type of stimulus will produce much the same type of response. This is demonstrated in such a basic behavioral sequence as the startle reaction. The progression of the reaction from the head caudally is apparently not susceptible of modification, and the reaction as a whole cannot be inhibited. It is possible to conceive of determinism as the underlying principle in yet another aspect of human behavior, namely in the progressive elaboration of reactions which accompanies maturation. The time at which the child first turns its head to the light, the sequence of events which constitute the development of prehension—the progression of events from gross sweeping movements of the whole arm through the use of the radial aspect of the hand on to actual prehension by opposition of the forefinger and thumb are events which are not susceptible of much modification from external stimulus.

Behavioral sequences based upon organicism can be seen in reactions of greater complexity within the same field. If one considers here not just the simple startle reflex, but the kind of behavior which the individual shows on repeated exposure to severe emotional stress, as in a series of engagements on the battlefield, one finds that definite modification of behavior occurs. Dollard (1943) in a recent publication upon battle fear, showed the progression which the form of the anxiety response took as the raw recruit gradually became the veteran of numerous battles.

In general, there is a lessening of anxiety, the fear of being a coward disappears, the individual tends to talk more openly about his fear and consequently prepares himself psychologically for the coming engagements. Moreover, the sort of things which the individual fears might happen to him in battle tends to change. In the case of the group under consideration, namely, the veterans of the Abraham Lincoln Brigade in the Spanish Civil War, there was an increasing fear of being crippled and disfigured for life, and in-

creased fear of being captured and tortured and a decreased fear of planes, artillery and of going over the top.

Still remaining within the same field, namely, that of anxiety, one can demonstrate the existence of behavioral sequences based upon autonomy. In a recent study (Cameron, 1944) it was possible to show that in a certain number of anxiety states the primary cause was no longer active and that the anxiety state was being perpetuated simply by the process of day-to-day living. This behavior sequence is particularly easily seen in the group of individuals who are specially prone to develop undue tension under stress. Such persons, when subjected to the speedup of the war factories, tend to show a progressive rise in tension with the ultimate development of anxiety. While a certain number returns to normal on laying off work, a considerable group shows very little abatement of the anxiety state, even after complete relief from the stress of work. In such persons, it seems that the tensional rises which are an accompaniment of ordinary living are sufficient to set off their very responsive anxiety mechanisms and thereby perpetuate this increased tendency to respond by anxiety symptoms.

Autonomy has been demonstrated in another field by Allport (1937) who has shown that where the level of output in factory workers has been increased by incentives, withdrawal of these incentives leaves the output at this increased level, at least for a time.

Instances of behavioral sequences based upon association can also be demonstrated within the field of anxiety. The clearest of these are the fears developed by individuals with reference to situations which they themselves recognize as containing no intrinsic threat. An example of this is provided by the fears which a patient expresses with reference to being in a closed room and which she apparently derived from the fear which she had experienced on being punished as a child by being locked up with many threats in a dark cupboard by her nurse. Of a similar nature are the fears expressed by some patients in the presence of any one in a position of authority, fears which are dependent upon the association between such persons and the authoritative father who evoked many fears in childhood and who was capable of inflicting real trauma.

The last type of sequence which has been provisionally designated by the letter "X" is best demonstrated where the individual sets up a goal. If one continues to draw examples from the field of anxiety, it may be said that where the individual finds himself in a dangerous situation, decides on a means to extricate himself and pursues the necessary course of action, his behavioral sequences will not be explicable on the basis of any of the four concepts already outlined.

From these statements, it will be apparent that living organisms, certainly those at the human level, reveal a series of possible sequences and that no one of them is sufficient to explain all the observable facts.

Up to this point, the discussion has been concerned with setting in order certain fundamental premises. What are the applications of these in the day-to-day problems of those who are concerned with human behavior?

The claim may be justly advanced that the recognition of the existence of different kinds of behavioral sequence affords us a series of new perspectives from which to evaluate human behavior.

First, it permits one to understand the difficulties experienced by those who enter the field of human behavior equipped exclusively or dominantly with the working concepts and the techniques used in the basic sciences. Certain aspects of human behavior can be conceptualized and dealt with on a basis of determinism, but by no means all.

Second, it serves to illuminate the confusion which exists concerning the use of the "shock" therapies in certain of the psychoses. Much of current thinking concerning deviations of human behavior is dominated by the conflict hypothesis. It is tacitly accepted that most deviations are due to a conflict between desires and prohibitions or between two or more fundamental drives. It is concluded that the patient cannot become well until this conflict is resolved. In actuality, individuals suffering from depressions can be treated by the "shock" therapies, can recover and can be returned to the situations in which they broke down without necessarily breaking down again. In an appreciable number of these cases, no measures need be taken to deal with the original situation

which may have precipitated the depressive reaction. Concepts based on organicism need to be employed to evaluate this. For it is clear that one can best deal with the situation in the terms of the postulate that the organism has actually undergone a change. Like the Stentor described earlier, it no longer reacts in the same way to the same situation.

A third illustration of the practical importance of the recognition of the existence of a variety of types of behavioral sequence is furnished by the difficulties encountered by those who attempt to deal with the primary causes in certain behavioral sequences, when they fail to recognize that these sequences have become autonomous and that the primary causes are no longer operative. In these cases, such workers may be said very truly to treat a chronic wound by anointing the dagger which caused it.

SUMMARY

1. The study of types of human behavioral sequence is relatively undeveloped. Five kinds of sequence can, however, be distinguished—those based on determinism, organicism, associationism, autonomy and a fifth as yet inadequately defined type which has been designated provisionally by the letter "X."

2. These five types of behavioral sequence can be shown to stand in a phylogenetic relationship to each other.

3. All five are present in the human organism and tend to be correlated with the degree of adaptability of the behavior shown, e. g., the deterministic sequences are characteristic of relatively unadaptable behavior.

4. Inadequate appreciation of these different types of sequences has resulted in considerable confusion, especially among those who enter the study of human behavior from the basic sciences and also with respect to certain aspects of our thinking concerning physical and chemical therapy and in the understanding of the mechanisms of psychotherapy.

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EDITORIAL COMMENT

A CENTURY PAST AND ONE TO COME

It was at the half-way mark of the century just completed that S. Weir Mitchell told the members of the American Psychiatric Association what was wrong with them and their profession. In the 50 years since—and despite the uninformed opinion of multitudes of nonspecialists—psychiatry, profiting by that experience, by a new spirit of inquiry and research, and by the progress of medical science and the scientific spirit in general, has made longer strides toward the understanding and treatment of the mentally deranged than in all the previous centuries since Hippocrates.

To Dr. Mitchell's work, there were assuredly well-taken exceptions. Dr. Mitchell was primarily a neurologist, he was not too well-informed as to some of the matters he ventured to criticize, and responsibility for the lack of progress of which he complained rested to some extent on the shoulders of his own specialty, yet his strictures on the profession were as a whole well justified. The responsibility of neurology for psychiatry's lack of progress up to 1894 lies largely in its own advances, or perhaps in those of pathology, prior to that period. The brain pathology caused by general paresis had become well known. As a consequence—and in ignorance of the causative agent—research was largely concentrated on attempts to discover similar pathology in the other psychoses; and psychiatric endeavor was generally turned toward merely custodial care, with therapy considered hopeless pending the finding of degenerative processes which, even in modern times, cannot be demonstrated with certainty to be other than imaginary in some two-fifths of our hospitalized mental patients.

The boldness and bravery which Weir Mitchell demonstrated in his address to the psychiatric association marked an arrest in these processes of custodial routine and scientific stagnation. The psychiatric profession had received one of those stirring-ups which all human activities, scientific, artistic, occupational and vocational, must have if human endeavor is to remain in the way of progress. It would be incorrect to infer that Weir Mitchell himself pointed the way toward important new methods of treatment or that his own inquiries contributed substantially to the growing sum of etiological knowledge. Weir Mitchell was an organicist—or a somatologist—in the best tradition; his famous "rest cure" was based on theoretical and diagnostic considerations which we now believe to be erroneous; his own interests in research were along lines which have proved for half a century to be unproductive, although one would not suggest that the directions

of inquiry of his day are altogether neglected in our times. "Total push" has no superficial resemblance whatever to the "rest cure," but it is a legitimate near relative, nevertheless; and the search for the etiology of mental disorder in central nervous system pathology continues—with certain careful workers insisting that they can identify specific brain lesions in schizophrenia.

But the real significance of the Weir Mitchell arraignment of nineteenth century psychiatry was that it brought about a renewal of the concept that progress was possible in a stalemated branch of science. The speaker certainly did not anticipate the developments which followed. The generally accepted theories of 1894 did not allow, for example, for the treatment of disorders which were then attributed to damage or fatigue of nerve tissue by such an agency as psychotherapy. Yet willingness to accept or explore the new—which dates from that meeting of half a century ago—made possible experimentation and treatment through the Freudian technique or the psychotherapeutic methods derived from it. And identification of the causative agent of "general paralysis" and discovery of treatment for it enabled psychiatry to extricate itself from another blind alley—even though the search for a "psychosis germ" may still attract some workers, the idea of finding either that or another single cause for a multitude of mental symptoms no longer absorbs the time and effort now better spent in less constricted research.

It would not be wholly wrong, either, to attribute America's willingness to experiment with "shock" treatment to the increased openmindedness of psychiatry in the past 50 years. To the conservative practitioner, the drastic methods of insulin hypoglycemia, and metrazol and electric-induced convulsions must have recalled the old-time scourgings of lunatics, their physical punishment for outbursts, their "treatment" by immersion in cold water. Similarly, psychotherapy must have seemed to many a return to the incantations and the spells of the witch-doctors, or to the exorcism of devils by the priesthood. To a man absorbed by the hunt for a causative organism or for physical pathology, the idea that psychological ills could be alleviated by psychological means was utterly foreign. And when the father of modern psychotherapy, Freud, based it on theories which contradicted man's most sacred assumptions about himself and outraged his moral ideas, there is reason to marvel that American psychiatrists were willing to try the new psychotherapy at all.

In the past 50 years, the outlook for the mentally ill in America has improved vastly. The diagnosis of dementia præcox no longer conveys the demand to abandon hope. Percentages of remissions and improvements in all the "functional" psychoses have increased greatly. Many who formerly

would have been committed are now not hospitalized at all. We may contend that this great change in the situation of American psychiatry is in essentials simply an accompaniment of increased open-mindedness, or willingness to experiment, to use empiric treatments whenever results show the least promise of justifying them.

One may conceive today that as psychiatry is entering another century, it is at a new crossroads. The new treatments and their theories are becoming crystallized. Their adherents must choose individually and as members of a professional, scientific discipline whether they will fight for the attitude of mind which has made present progress possible or yield to the easy temptation of concluding that present directions of research and present theories are the only ones worthy of being followed. There are signs already of the drawing of battle lines. The drastic "shock" therapies have profound effects on the functioning and the physiology of the nervous system. It would be easy to conclude, therefore, that all functioning is physiological—that is, an attribute of the internal *milieu*—and that any so-called psychological explanation of these treatments is unworthy of consideration. Already, some have publicly hailed the successes of "shock" therapy as ending permanently an era of blind and profitless psychological experimentation with a subject belonging in the realm of physical medicine. And the extreme on the other side can be as dangerous. The psychiatrists who refuse to recognize the possibility that the physical effects of the "shock" therapies have bearing on disease outcome in their patients—and almost everybody is acquainted with one or another such psychiatrist—can also erect a road block to research. Insistence that the effect of insulin, metrazol or electricity must be found only in direct or indirect psychological changes can halt scientific progress as readily as did the long search of the pathologists for obvious brain degeneration in the "functional" disorders.

Fortunately, science presents few such either-or alternatives as choice between pure organicism and pure psychology. Vigorous and promising inquirers are as earnest today in their fight for the open mind as are the extremists in the battles to support their own positions. The growth of support for psychosomatic medicine as a new specialty is a most promising development in the never-ending struggle against the ancient concept of dichotomy, of the separation of mind and body which—it is becoming increasingly recognized—has no more place in general medicine than in the field of so-called mental disorder. Even the foundation of such unorthodox schools as General Semantics—which seems to be based on oversimplified concepts of brain function—must be regarded as a welcome sign of willingness to examine and test new theories. And it may be observed in passing that more than one valuable contribution to theory or method has already

been made by inquirers whose principal work is not along the main highway of psychiatric thought and whose basic theories have not been widely accepted.

As we see it, the promise for the future is in the ever-increasing numbers of those who pursue a path between the organic and the psychological extremes—the surgeon and internist who appreciate the rôle that present and past environment, working through the psyche, play in the conditions they treat, and the psychotherapist who holds constantly in mind that the most purely psychological treatment of those mental or emotional disorders which are most widely conceded to be functional must be mediated by the somatic means of the physician's apparatus for speech and the patient's physical equipment for hearing, aside from the essential aid provided by their respective central nervous systems and by the various glands, organs and body fluids which permit nervous system functioning by keeping bodies alive. One can assume no division between structure and function, between soma and psyche, if one is to follow the road of scientific progress. If yesterday's discovery of shock therapy threatens dangerous overemphasis on the organic, similarly dramatic cures by tomorrow's discovery in the field of psychotherapy may threaten an equally dangerous overemphasis on the psychic.

But even greater menace to progress may lie in the individual personality organizations of scientific workers than in the less personal and perhaps fortuitous trends of research. Surgery may or may not be a professional sublimation of sadism; and willingness to become a subject of scientific experiment in physical medicine or psychiatry may or may not be an evidence of passive or even masochistic tendencies; but the imbalance of aggressive and passive personality components may very well determine the physician's reactions toward shock treatment or psychotherapy in ways which are at variance with strictly scientific, objective appraisal.

American psychiatry has completed a century of which the first half—after a brilliant beginning—was marked by futility and stagnation, the second half by progress. We are now at the brilliant beginning of a new century. The outlook for scientific progress in the field of mental disease was never more promising. But promise and possibility are not assurance. Rigidity of thought, insistence on the sacred inviolability of as yet unproved theory, can bring the splendid prospects of today to the drab and disappointing end of the almost equally fine promise of 100 years ago. By virtue of its professional orientation, psychiatry is, by good fortune, in a better position than any other modern scientific discipline to protect its own future. Psychiatry is the science of the most important function of the human organism, the mind. The psychiatrist has the training and experience

to know when irrational trends are displayed in his coworkers and, to some extent, in himself. If enthusiasm for a new technique is rooted in sadism, if paranoid elements enter into judgment of a colleague's discovery, if unresolved Oedipus factors complicate relationship to a fellow-worker in research, the psychiatrist is better equipped than any other scientist to recognize and make allowances for irrationality. Without making the claim that his medical specialty is a Samothracian mystery, the psychiatrist cannot fairly withhold recognition that it is esoteric. Psychiatric methods alone include the highly specialized technique for the full evaluation of the irrational and the prejudicial whenever they appear in the productions of the human mind. In different terms, the psychiatrist is equipped to come closer than any other modern worker to the instrument of progress known in professional jargon as scientific objectivity and still better known in plain English—as we have referred to it here—as the open mind. The brilliant promise that the new century in psychiatry holds forth for us can be attained only if we bring our full professional skill to bear on the problem of reaching and maintaining that open mind.



A BURDEN OF UNDESIRABLE AFFECT

That the affective connotations of words vary widely with time and space is a matter of common knowledge rather than one requiring scientific demonstration. The philologists have written learned volumes on the subject; but, for most of us, it is only necessary to think of the difference in affect in English-speaking societies in "bloody," which is a respectable descriptive term in America and an unspeakable curse in England; "bitch," which is respectable in England and definitely not so in America; and "to root," which is a sports term in good standing in America and is, or used to be, a "dirty word" in Australia. And any dweller in the land of the once six great nations of the Iroquois can reflect that the formerly dread names of "Oneida," "Onondaga," "Mohawk" and "Seneca" now bring to mind—among other wholly inoffensive things—one peaceful village, one rural county, three summer-resort lakes, one tranquil river, one prosaic textile mill and several innocent country clubs.

But it is perhaps even easier to recall words that carry a burden of affect unchanged or but little changed over distance and down through years or centuries. For a great many decades for example there has been no perceptible change toward social acceptability in the affective connotations of "sex." There has been vastly increased tolerance for matters which the public regards as related to, or associated with "sex," but little or none for the prohibited term itself.

For this tolerance of related subjects, one may consider "legs." When the automobile was becoming popular and women were learning to drive, a universal (or at least very general) movement began to lift the centuries-old taboo on the display of legs in favor of greater comfort and facility in the use of those members. The daughter of the girl who once clutched voluminous and dusty-hemmed petticoats about her ankles as she climbed cautiously into the buggy demanded freedom to the knees for legs needed to operate clutch and brake pedals. Legs came into sight. Bathing costumes displayed the same trend as dresses. Taffeta skirts and bathing stockings disappeared, the "daring," one-piece, Annette Kellerman swimming suits were worn by a few bold pioneers; today, scanty shorts and scantier brasieres are what the well-dressed woman will wear on the beaches. And the word "limb" disappeared while "leg" became entirely respectable—for an example of its current uses, few ministers denouncing pornography from the pulpit would hesitate to make their meaning plain by referring to "leg-art."

But what has been true of some related words has not been true of the word "sex" itself. It is a word loaded and double-shotted with affect from breech to muzzle. It appears to mean, to the vast majority of persons, either sexual intercourse or the sexual perversions; and no specialized use of the word in combination or technical sense seems to rid it of its affect.

The purpose of this discussion is to raise the question as to whether some means cannot be found to overcome general popular resistance to the urgent and growing need for widespread sex education. In the April, 1944, number of this *QUARTERLY*, the suggestion was made that similar popular resistance to acceptance of modern concepts of the psychoneuroses and to recognition of their wide prevalence might be overcome if an educational program could be framed which would illustrate in nonsensational fashion that many of the greatest and the best of the world's leaders throughout ancient and modern times have suffered from mental disorders. This is to suggest that a similar endeavor in relation to sex education would be worth studying. An exact parallel is not proposed—it would not be necessary to demonstrate to most persons that most of the world's great figures possessed genital organs and either engaged in overt sexuality or devoted much energy to the problem of not doing so, although it might be necessary to persuade many persons that this fact was not altogether deplorable. But the possibility of an analogous approach to the sex education problem seems worth exploring. There has been so much discussion of this question in the last few decades, and so many progressive ideas have been advanced or actually tested that the person abreast of these developments may find it difficult to realize the

extent to which popular resistance to sex education still persists. But that it is widespread can be demonstrated readily. Survey material is available.* Or one may illustrate with a recent news item.

Evelyn Millis Duvall, director of the Association for Family Living, appealed to the National Congress of Parents and Teachers in May, 1944, for support for school courses in sex education and family life, for "courage to meet needs with scientific honesty rather than with cautious taboos." The language seems quaint; it recalls the circuitous and stilted approaches to this problem of the 1920's and still earlier periods; but the fact appears to be that it is appropriate for the popular thought of the 1940's as well. For the majority of America's young people in America's schools of today, there seems to be little or no more preparation for one of the most important activities of their adult years than was offered in the little red schoolhouse of a century ago.

It is suggested here—and this is by no means a new suggestion—that this state of affairs is largely due to the burden of affect carried by the word "sex." For most persons, "sex" appears to convey all the horror and repugnance which may be aroused by thought of illicit intercourse or the practice of the perversions. By a natural process of definition and association, "sex education" is conceived of, consciously or unconsciously, as instruction in these matters, which implies education in "dirt," immorality, "smut," "Freudian filth," birth control or promiscuity, according to individual background and complexes.

Various indirect approaches have been attempted toward presenting sex education without the affective implications of "sex" by moves designed to convince the public—including parents and teachers—of a fact that is obvious to all social hygienists, that sex education is not information about or instruction in the technique of the sex act. There have been and still are societies in which instruction or initiation into physical sex is a routine part of education—and skeptical inquirers may be referred for details to Malinowski, Briffault and numerous other investigators and students of social anthropology and allied disciplines. The merit or lack of merit of such ancient un-American customs is not in question here—the point in referring to them is that nobody, so far as we are aware, has ever suggested seriously that any such practice be introduced in our culture. There would, in fact, be extreme difficulty, if such instruction were wanted, in giving any information more authoritative than that derived from the gutter or bawdy-house school. It is true that there is technical literature on the sub-

*Baker, John Newton: *Sex Education in High Schools*. Emerson Books, Inc. New York. 1942.

ject,* but it is a reasonably safe assertion that neither the members of the medical profession as a whole nor of its psychiatric specialty are much more familiar with it than they are with the dialects of the suppositious inhabitants of the planet Mars. And we are so far from even hinting at the possibility of such teachings that sex instruction is one of the few educational subjects in which diagrams are customarily used for illustrative material instead of artists' reproductions or photographs; and taboos surrounding the subject are such that discussion of venereal disease is usually limited to dire warnings against the horrible results of sex. And the teaching of birth control in sex education courses is so vastly out of the question that the earnest crusader who even dared express the opinion to a class that prevention of conception was possible would be considered a fitting subject for a psychiatric consultation.

Yet bogies conjured from such impossible and imaginary teachings appear on the surface—deep underlying motives need not be discussed here—to be the principal barriers to a rational sex education program. We have discussed before in connection with the problem of venereal disease** the origin of some similar bogies and the need for their removal if medicine is ever to be allowed to handle an important matter of public health as a medical problem comparable to those raised by typhoid fever or tuberculosis. And we have discussed before certain aspects of sex education as a means of promoting healthful habits of thought and action,*** reviewing matters which few informed persons would dispute today as to the relative effects on modern youth of scientific truth and street-corner misinformation. This matter of the affect of the word "sex" is another aspect of a single problem of great moment. It is doubtless not the most important aspect—which may be the business of finding and training adequate teachers—but it appears to be a subject which must be disposed of before other related questions can be approached for solution. If some way cannot be found to break down initial resistance, there is little point to consideration of such things as outlining courses of instruction or choosing suitable personnel for them.

First, it should be possible to establish that not only is instruction in physical sex neither contemplated nor reasonably possible in a school "sex education" course, but that from a popular point of view it would be superfluous, as well. Demonstration of this superfluity should not be difficult. The adult whose own childhood sex experiences have not been too deeply

*Van de Velde, Theodoor Hendrik: *Ideal Marriage*. Covici, Friede, Inc. New York. 1930.

**The Wages of Sin. Editorial. *PSYCHIAT. QUART.*, 16:2, 408, April, 1942.

***Sex education for healthful living. Editorial. *PSYCHIAT. QUART.*, 17:2, 372, April, 1943.

repressed should have little trouble in realizing that comparatively few adolescents are without some information—or misinformation—as to the appearance and more obvious functions of the genitals of the opposite sex. And there should be general recognition that the majority have theoretical acquaintance with the mechanics of coitus, an acquaintance supplemented not infrequently by practical, if ignorant, experimentation. Sex education is not a proposal to teach what is already known, although it may include correction of misinformation.

The purpose of a sex educational program is, as we conceive it, entirely different. It is to supply information and guidance which will enable the individual to adapt his own psychobiological equipment to the functions and demands of adult life, to accept an adult heterosexual rôle without inadequacy or guilt, to assume the responsibilities of maturity as a marriage partner and a parent.

The term "sex education" is supposed to cover this whole matter of psychobiological maturation. But how to convince parents and teachers of that? In the process of rendering unto Caesar what is due unto Caesar, it is frequently necessary to pay regular tribute to popular prejudice. Would one teach in the schools, for example, that there really is no balm in Gilead or assert emphatically in civics courses that American politicians are not all, all honorable men? In presenting the unvarnished truth, one does not necessarily scour away the substance below the removed finish.

Perhaps the unvarnished truth would be as well presented and the cause of general enlightenment served as well if some term of more or less neutral affect could be substituted for "sex education." The psychoanalysts, in decades of earnest effort, have failed to convince even their colleagues of the psychiatric profession generally that what they mean by "sex" is not coitus plus the perversions. Similarly, it seems impossible to convince parents and teachers as a whole of the same general truth in relation to sex education.

Substitute terms have been proposed by those educators who have presented sex education in courses on "marriage" and "family life." But most of the terms so suggested have either sounded like disguises of forbidden subjects or have conveyed the faint aroma of second-hand sanctimony or withered orange blossoms. A term is needed which will tell parents, teachers and youth alike that the course to be presented is an important one which covers the whole matter of adjustment to an adult world—including what is popularly meant by sex among many other topics which are recognized scientifically but not popularly as part of the sex problem—and which will not include "smut," encourage "immorality" or be colored by "preach-

ing." The technique is well known in individual therapy,* and it would not seem impossible to adapt it for general educational purposes. It is not the intent here to suggest an appropriate term for this educational program. Objections are only too evident to the phrases which occur most readily. Those to "marriage" and "family life" courses have already been cited. "Adult adaptation" might suggest itself on the basis of well-known professional adaptation courses, but the term is not only too pretentious for public school use but is open to other obvious objection. "Mental hygiene" or "social hygiene" might come closer to covering the ground, but they are already established as descriptive of other subjects—"adult hygiene" might be a possibility.

We should say emphatically that this discussion is not intended to point the way toward a euphemism, a "nice Nellyism" or a term of Victorian prudery. It is not intended even to suggest a process akin to that by which the ancient Anglo-Saxon four-letter words for sexual and eliminative activities have been banished from polite society to the bordello and the barnyard. Psychiatry has had experiences which provide almost exact parallels. "Lunacy" and "insanity" came to mean one thing to the public, another to the law courts and a third to the practitioners of psychological medicine. The practitioners of psychological medicine surrendered use of the words to the general public and adopted a new (and, incidentally, more exact) term themselves.

Within present memory, the word "sex" has shown no sign whatever of a change in affective connotations toward social acceptability. To wait for such a time of changed affect to arrive, is to postpone a greatly needed educational program indefinitely. The devising of a suitably descriptive term for "sex education" which would be devoid of the present affect of "sex" should not be a task beyond the combined abilities of modern psychiatry, psychology, philology and education.

*For an excellent example of indirect approach to a problem of adult adjustment in a psychosexually immature subject, See: Erickson, Milton H., and Kubie, Lawrence S.: The successful treatment of a case of acute hysterical depression by a return under hypnosis to a critical phase of childhood. *Psychoan. Quart.*, X:4, 583-609, October, 1941.

BOOK REVIEWS

One Hundred Years of American Psychiatry. Published for the American Psychiatric Association. xxiv and 650 pages. Cloth. Columbia University Press. New York. 1944. Price \$5.00.

This is the centennial volume, the publication of which was undertaken by a committee appointed by the president of the American Psychiatric Association, Dr. George H. Stevenson, in 1941. Already, plans were being laid for an appropriate celebration of the founding of the association. The original committee, subsequently enlarged, had consisted of Dr. Arthur H. Ruggles, then secretary of the association; Dr. Gregory Zilboorg and Dr. James K. Hall. It was determined that as a permanent contribution to psychiatry there should be published at that time a history of psychiatry within the 100 years of the existence of the association. A number of tasteful illustrations, most of them portraits, adorn the book and there are facsimile signatures of all of the original 13 members.

The association appears to have had its inception when Dr. Samuel B. Woodward of Massachusetts visited Dr. John M. Galt at Staunton, Va., returning a visit which the latter had made to him a year or two previously. Dr. Galt had recently been appointed superintendent of the Western Virginia Asylum from private practice. Before entering upon the performance of his duties he took a leave of absence to travel to the north and east to study the care of mental patients in the best-known institutions, which were along the seaboard.

Richard H. Shryock, medical historian of note, contributes the first of a series of essays comprising the volume. His topic is "The Beginnings: From Colonial Days to the Foundation of the American Psychiatric Association." He traces the progress of psychiatric theory and practice in the Colonial era and touches upon the history of mental healing both in Europe and America.

Henry E. Sigerist prepared the chapter on psychiatry in Europe at the middle of the nineteenth century. He gives credit to Wilhelm Griesinger who had a wide knowledge of medicine gained by travel in France, England, and the Near East. Griesinger was an advocate of nonrestraint and it is largely creditable to him that mental hospitals in Germany steadily improved during the latter half of the nineteenth century, whereas in most of the other countries of western Europe there was no, or but little, progress.

Dr. Winfred Overholser contributes a chapter entitled "The Founding and the Founders of the Association." It begins with the historical meeting of the 13 founders in Jones Hotel in Philadelphia on October 16, 1844.

This is an excellent contribution, containing much of interest. The chapter is made up largely of biographical sketches of the Original Thirteen. Dr. Overholser is perhaps somewhat bold in characterizing Isaac Ray as "one of the most remarkable of these men, if not the giant among them all." No one would detract an iota from the fame of Dr. Isaac Ray. He was indeed a great man but if one judges by the impress made upon future generations, one must include three of those present there that day. Ray was a prolific writer, a sound thinker and wielded a great influence in his generation and the succeeding one, but today only medical historians know about the career of Isaac Ray. On the other hand, Kirkbride, whose taste was practical and constructive, lent his name to a style of architecture which is still to be met with in many of the institutions founded in the eastern states as well as in the midwestern; and there are probably more mental hospitals today built on the Kirkbride plan than any other. The third great name in this triumvirate, according to the reviewer, is that of Amariah Brigham. His great work in establishing the "American Journal of Insanity" has survived for 100 years; indeed, the journal is older than the association by four months, and its circulation and influence reach to the four corners of the earth. Today more than ever, it reflects the soundest and best that there is in psychiatry.

A chapter written by Dr. Samuel W. Hamilton, who is the president-elect of the association, is entitled "American Mental Hospitals." In it, he traces the development of modern hospitals and methods of treatment, and treats of schools for the mentally deficient, the boarding-out system and hospital management.

Dr. John C. Whitehorn writes on "A Century of Psychiatric Research in America." Dr. Henry Alden Bunker discusses American psychiatric literature, while Dr. William Malamud reviews the history of psychiatric therapies. Albert Deutsch, well known for his medical historical writings, narrates the history of mental hygiene and military psychiatry of the Civil War period and discusses military psychiatry of the present war. Dr. Edward A. Strecker, who himself was active in World War I, writes of military psychiatry of that period. Dom Thomas Verner Moore contributes a chapter on the development of psychology in its relation to psychiatry in America. Dr. James K. Hall, the editor of the volume and Dr. Gregory Zilboorg, the associate editor, each contribute an introduction and Dr. Zilboorg in addition writes of medicolegal medicine.

The association did well to have this monumental work prepared, and both Dr. Hall, the editor, and Dr. Zilboorg, the associate editor, have devoted themselves untiringly to the completion of the project. They deserve and will freely receive the gratitude of the American Psychiatric Association.

Injuries of the Skull, Brain and Spinal Cord. By SAMUEL BROCK, M. D.

Second Edition. 616 pages. Cloth. The Williams and Wilkins Company. Baltimore. 1943. Price \$7.00.

This splendid volume is a second edition. The first edition issued early in 1940 had an encouraging reception and was extensively employed as a book of reference. In preparing the second edition, Dr. Brock has made a number of revisions and has added a new chapter prepared by Dr. Paul F. A. Hoefer on electroencephalographic findings in cases of injuries to the head.

The book is made up of a series of monographs by authors distinguished in the particular subject about which they write. There are 23 of these monographs, each complete in itself and there is but little repetition, a fault that is apt to be the case where a symposium represents the work of a number of individuals. Some of the authors, who are perhaps best known to readers of the *QUARTERLY* because they were closely identified or in contact with the work of the State hospitals and Psychiatric Institute are Karl Bowman, Leo M. Davidoff, Charles A. Elsburg, I. S. Wechsler and the late Paul Schilder. The entire field of injuries to the central nervous system is amply covered.

The publishers, the Williams and Wilkins Company of Baltimore, are to be congratulated upon the fine workmanship and the clear illustrations which add much to the value of the book.

Virus Diseases in Man, Animal and Plant. By GUSTAV SEIFFERT.

Translated by Marion Lee Taylor. 332 pages. Cloth. Philosophical Library. New York. 1944. Price \$5.00.

The author states his purpose is to survey the present studies of virus investigation with special consideration of the most recent literature, especially the foreign.

The volume is arranged according to what the author calls "General Division," in which elementary and inclusion corpuscles, size, filtrability, cultivation, pathogenesis, and immunity in virus diseases are discussed.

Certain diseases of questionable virus origin of man, mammals, and birds are the next main topic. In this category, whooping cough, and acute articular rheumatism are included. Although whooping cough has been regarded by some as due to a filterable virus, the medical consenses as to the evidence at this time points to the Bordet-Gengou bacillus as the etiological agent as shown by the prophylactic and therapeutic results obtained by using suspension of such bacteria. It is surprising that the atypical or virus type of human pneumonia is not mentioned in this volume, as reports in the American literature of recent years show this condition is by no means a rarity.

Eagles in the "7th Rheumatism Review" of 1939 questioned whether the

so-called virus bodies in rheumatic exudates are true elementary bodies as in known virus disease. Although the corpuscles are agglutinated by the sera of sufferers in a certain percentage of cases, there is no consistent relationship of the agglutination to the clinical stage of the disease and no evidence that it runs parallel to the antistreptolysis titers. The report of the following year further states that the promising work of the past few years on a possible virus etiology of rheumatic fever has led to disappointing results, and the importance of the hemolytic streptococci becomes more apparent.

The latter portion of the book is devoted to virus-like organisms, including the Rickettsia, Bartonella, and bacteriophages as well as filterable bacterial forms, and concludes with a section on the methods of virus investigation. Under bacteriophage, the author states: "We cannot enter into the possibilities of using bacteriophages in therapy and prophylaxis. The results are not yet assured but absolutely not completely negative." MacNeal of New York, 1939, reported on the favorable use of bacteriophage in the treatment of septicemia in 300 patients, while the latest reference by Seiffert on bacteriophage is for the year 1936.

The book is useful in the study of virus diseases, as foreign literature, especially the German, is summarized, and references are included. It reveals considerable and detailed research but lacks assurance, as the more recent literature, particularly American, is omitted.

Rorschach's Test I. Basic Processes. By SAMUEL J. BECK, Ph.D. xiii and 223 pages. Cloth. Grune & Stratton. New York. 1944. Price \$3.50.

"Basic processes" mean the scoring of a subject's responses to the Rorschach plates. Beck's book seems to be the greatest collection of scoring samples available in print, larger than those previously published by Hertz, Hunter, Klopfer, Riekers-Ovsiankina, Rorschach, and Beck himself. The scoring samples are grouped according to the scoring symbols. There is a chapter on whole, detail, movement, color, shading, etc., responses. Within each chapter, the samples are arranged plate by plate so that the reader can easily find samples illustrating diverse scoring questions he would like to examine. In the great majority of cases, the subject's response is recorded, and Beck's scoring of it is added. The scoring of some responses is discussed in detail, and the reasons which prompted the author to score them the way he did are indicated. The introductory chapter contains remarks on the seating arrangement during the examination, manner of recording the responses, and other points that may arise during the administration of the test.

Beck says that, with the exception of the concept of the original response (which he discarded), "all my other practices will be found either to be

identical with Rorschach's or to represent minor variations of the latter." He frowns upon those who "have beaten out numerous tangential paths away from the Rorschach nucleus," because he does not believe that the need for a deviation has been demonstrated. His attempt to standardize and perpetuate the Rorschach-Oberholzer tradition is prompted by the desire to introduce uniformity in the scoring of Rorschach responses. "The hope is that, given such a manual of constant usage (i. e., the 'Basic Processes'), it will be possible to work with the test as a stable instrument." The Rorschach method should "become an operationalist technic."

To formalize the scoring of responses and make it as uniform as possible, Beck placed great emphasis on the wording of the responses. His attempts at standardization are in terms of the verbal form of the subject's responses rather than in terms of the visual images projected by the subjects into the blots. These projected visual images cannot be directly studied. The subjects have to describe them in order to make them accessible to the examiner. In the opinion of this reviewer, the verbal responses are indispensable but only as a means to a goal, not as the goal itself. Rorschach himself made this plain, and it is for this reason that he called his test a test of perception. An exclusive reliance on the verbal form of the subject's response leads Beck, e. g., to score every "butterfly" response to Plate 1 as an F+ because "butterfly" is a frequent response of healthy persons, even when the subject's image of the butterfly is quite different from that of the healthy person's and incompatible with the real shape of a butterfly. The following response of a schizophrenic: "It resembles a butterfly with some sort of feelers on it, protruding eyes, and a lizard's tail; it has a double body," was scored as W+. To indicate that something was wrong, Beck treated the "lizard's tail" as a separate response and scored it F-; thus he had two scores: WF+ and Dd F-, where the patient had one WF- reaction.

Fortunately for the beginner, for whom the book is intended, Beck is not consistent in his attitude of formalized standardization. Now and then, throughout the book, he departs from a rigid procedure and even overrules a subject. Sometimes "when a background of experience is available . . . I weigh (the examiner's) experience more than the subject's testimony." The decision of whether a response is new or merely a verbal elaboration of the preceding response is also a matter of judgment based on experience. "The elaborated element is not scored" and should not be scored (although it was in the schizophrenic's butterfly). Persistence and stimulation of the subjects in order to obtain additional responses, as well as "clinical diplomacy" are justly advocated. They cannot, however, be made uniform and are hardly a strictly "operationalist procedure."

A description of the psychological processes, represented by various Rorschach symbols is not within the scope of the book. The author makes an exception in the case of the human movement or M response. Rorschach said that the M represents, or samples, the subject's "inner life." Beek identifies the Rorschach concept of "inner life" with the "material of Freud's unconscious and of the psychoanalysts' dreamwork." Now, "inner life" is not synonymous with "dreams," and, furthermore—whatever the M measures—the valid conclusions that are drawn from a subject's M responses imply that the M responses measure something that affects social conduct and fundamental attitudes toward life much more directly and persistently than the changeable wishes expressed in dreams. Beek's feeling that interest in the psychological significance of the M is lacking is hardly justified in view of a number of articles by several authors on this very subject.

Beek is occasionally polemical and somewhat inadequately presents the views of those he criticizes. E. g., Klopfer's FM or animal movement response and m or inanimate movement response are not "various forms of M" but are varieties of the F or form response. Beek justly warns against the "naïve largesse with this label M." However, he himself is rather generous with the symbol M and scores as human movement "a man sitting in an armchair" (projected in a tiny edge detail) or "the phallus, hanging down, not the erect position" (another tiny edge detail). There is no evidence of any motion or kinesthetic feeling in either of these responses which the reviewer sees as rather typical nongenuine, secondary movement responses, which are not scored as M. In these and similar examples, we are not dealing "with a movement sensed in the figure" for there is even no motion at all, and no kinesthetic feeling of tension or readiness of movement.

The book will definitely aid the beginner in the acquisition of good scoring habits. Increased experience will guard the student against its shortcomings of formalized uniformity. Beek's "Basic Processes" is a welcome addition to the growing number of textbooks of the Rorschach method.

War Criminals and Punishment. By GEORGE CREEL 303 pages with appendices and index. Cloth. Robert M. McBride & Company. New York. 1944. Price \$3.00.

George Creel wants "lawyers, theorists and sentimentalists" to quit muddying the waters surrounding the future punishment of war criminals. He says: "No less a person than Madame Sigrid Undset, proceeding on the theory that the crimes of the Germans clearly indicate insanity, has advanced this amazing suggestion: 'The trial of war criminals should everywhere be

conducted with the aid of psychiatrists and specialists from several branches of medicine. And the forces of occupation should be accompanied not only by regular Red Cross units but by a body of alienists and neurologists.' " Mr. Creel wants no such nonsense. He wants war criminals tried by military commission or military court in the countries where their crimes were committed and according to the laws of those countries. He wants the numerous offenders whose guilt already is clearly established, Hitler, Mussolini, Himmler, Frank, Goering, Tojo and the better known Quislings, condemned now, and declared fugitives from justice, to be executed when apprehended. He believes the Allies should reach agreement now on procedure, and in particular on procedure when two or more nations have claims for the disposal of the same criminal—for instance, Hitler.

"War Criminals and Punishment" is a forceful and important book on this subject; and Mr. Creel might be surprised at the amount of general agreement and the comparatively few exceptions his thesis is likely to evoke in professional circles. We cannot answer for the lawyers, against some of whom Mr. Creel appears to have a case, nor for those designated merely as "theorists and sentimentalists," but this reviewer has met no psychiatrist who would invoke the rules of the McNaughton case or even those established for Leopold and Loeb to protect persons who have directed mass pillage and outrage and whose deliberate murders of helpless civilian men, women and children are numbered by the millions. Regardless of his own beliefs as to whether his acts are right, the world cannot reasonably allow a Hitler to survive, perhaps to recruit another 80,000,000 fanatics for a new era of throatcutting, nor will it be safe to forgive an Abetz or a Ribbontrop the death penalty and be content with imprisoning him for life because he is a psychopath.

The psychiatrist will see advancement for the physician, the profession and society in general in as thorough a psychiatric study of war criminals as can well be made before their punishment, and in psychiatric participation in the occupation and administration of the Axis countries. But he is also as likely as anybody else to appreciate the advantages of speedy military trial—with proper safeguards for fairness—for military offenses. To be convinced, one has only to contrast the Kharkov trials before the Military Tribunal of the Fourth Ukrainian Front and the trial of the German saboteurs before the United States special military commission with the current civil prosecution for sedition of some of America's best-known Fascist agitators and with the mock trials before the German republic's civilian courts of Germans guilty of World War I atrocities.

George Creel, like the circus elephant and the Bourbon kings, has unfortunately forgotten nothing. He held a position in America in World

War I days analagous to that of propaganda minister in some nations of today; and he still writes like a propaganda minister. Much of his book is devoted to proving that the Germans really did commit atrocities during the first World War and that they were not misused at Versailles nor robbed nor oppressed afterward. This argument would have been pertinent some years ago when most of the world had eagerly gulped down the post-war "poor mistreated Germany" propaganda, but modern atrocities, advertised, proclaimed and boasted of, have pretty well dispelled public doubts of past German military behavior; and the revelation of German plotting of the last decade has made the question of World War I guilt somewhat academic. The tried and true technique of other years appears to disadvantage also in Mr. Creel's application of epithets to selected enemy leaders from Hitler to Leon Degrelle, the Belgian Quisling: "Bombastic, posturing clown," "walking venom sack," "bespectacled, soprano-voiced creature," "fat-rumped, frowzy Balt," "treacherous, scheming old man," "Mad Dog," "son of an embezzler," "blundering, hysterical coward," "traitor, false alike to his country and his God." "bumptious, strutting blowhard," "sly, ferocious Carlsbad bookkeeper," "A Judas not even paid his thirty pieces of silver!" That skunks stink is a well-known matter of natural history; the skunks Mr. Creel describes herein are well identified and generally known to the Allied peoples; the adult of average intelligence can dispense with literary attempts to reproduce their odor. Similarly, why labor World War II atrocities which are already documented in the fullest detail in reports ranging from "The Black Book of Poland" to German army orders, proclamations and announcements, and the boastings of Hitler's own speeches? Mr. Creel's thesis concerning method and manner of punishment of the war criminals is well reasoned and well presented; it seems regrettable to alienate its more intelligent readers by bursts of billings-gate and to divert others from the practical purpose of the work to the intensification of anger which is already intense enough.

Pain Mechanisms. By W. K. LIVINGSTON, M. D. 253 pages. Cloth. The Macmillan Company. New York. 1943. Price \$3.75.

This monograph includes a discussion of the syndrome described more than 70 years ago by Weir Mitchell who gave it the name *causalgia*. As the name implies, the syndrome is characterized by excruciating pain, burning in character and radiating from the nidus which is usually a gunshot wound or other trauma involving a nerve of one of the extremities as if the part were held too close to a hot stove. At times there is tingling and numbness of the fingers if the affected limb is an arm, or of the foot and toes where it is a leg that is affected. The skin of the affected part is red, roughened and, notwithstanding the subjective sensation of burning, it is

actually colder than the unaffected corresponding limb. There is also increased sweating so that the perspiration may drip. The classical case of this disorder was described by Weir Mitchell in his book "Nerve Injuries and Their Consequences," published shortly after the Civil War. A private soldier was wounded in the left arm above the internal condyle. The bullet emerged through the biceps with injury to the median and ulnar nerves. On the second day the burning and darting pain began. It was so severe that a heavy step on the floor, shaking the bed, or a touch on any part of his body was sufficient to bring on extreme paroxysms. The wound was opened and two or three inches of the median nerve excised, but the pain in the area of distribution of the nerve did not cease. A week later, the right arm grew weak, and finally the patient was unable to feed himself. In the cases that have been described attention has been given to trophic changes, glossy skin, localized sweating, alterations in temperature of the affected area; and the symptoms were regarded as due to nerve irritation.

A considerable literature has grown up since Mitchell's classical report, and attention has been called by a number of observers to the mental element which is implied by the symptoms. Livingston devotes space to discussion of the psychic elements, recognizes actual pain and "anticipatory pain" and realizes that one may be as strong as the other. He points out that a painful sensation, even of moderate or mild degree, if it becomes associated in the mind of the patient, because its nature is not understood, with a fear such as of cancer or death, may be transformed into unbearable suffering. He sees, too, that evidence which convinces the patient that his fears were unfounded, that the nature of the pain is really trivial, may immediately reduce the painful sensation in degree or remove it altogether. This observation embodies the essence of psychotherapy. The author, however, does not fully accept this interpretation. After quoting at length from C. S. Bluemel on the subject of psychoneurotic pain in which examples are given of pain following amputations and other surgical operations, he finds himself completely at variance with the implications drawn from those cases. His training as a surgeon is perhaps what makes it difficult for him to see the validity of psychic pain; but his candor in discussing the entire subject fairly and frankly does him credit.

This book is an important contribution to psychotherapy although the author might deny this implication. He prefers to call it a "Physiological Interpretation of Causalgia and Its Related States." The book is a challenge to psychiatrists and neurologists to give deeper study to the interpretation of symptoms, particularly painful symptoms, encountered in their patients. All such practitioners would profit by its careful reading and it is recommended as deserving a place in the library of every such physician.

I Was Hitler's Doctor. By KURT KRUEGER, M. D. 322 pages. Cloth. Biltmore Publishing Co., Inc. 1943. New York. Price \$1.98.

In the foreword and preface of this book, it is stated that the author was the personal physician of Adolf Hitler before the latter came into power and up to the time that the author escaped from Germany a few jumps ahead of the Gestapo. The statement is made that he performed a psychoanalysis upon his patient and that he made use of the material so gained for this narrative. He makes a weak attempt to excuse himself for publishing what was disclosed to him in confidence by a patient on the ground of Hitler's evil character and the necessity for making him known to the world. This strikes the reviewer, however, as entirely inadequate.

A physician, before he receives his diploma to practice medicine, is required to take an oath, known as the Hippocratic Oath, one of the provisions of which is that he will hold inviolate all that is said to him in his consulting room. The author argues that since "Hitler crossed the Polish front and blazed into a world conqueror . . . the delirium inside the mind of Hitler has become a Saturnalia of slaughter that is leaping across seas and continents. The Fuehrer's private feelings no longer matter in the least." If it could be shown that Dr. Krueger's private information would throw light upon some phase of Hitler's objectives which would aid in his defeat, he as a physician would perhaps have been justified in communicating it to the leaders of the Allied cause, but the narrative lacks that particular quality. The author has but little that is new to disclose and that little seems to be unimportant.

Upton Sinclair has written a foreword. Sinclair says: "For the writing of an introduction to this book I possess two important qualifications. First, I have read the book; and second, I have read many other books on the same and allied subjects. One other qualification I lack: I do not know the author of the book. I assume that he exists, because I have a letter from him; a pleasant letter . . ." Sinclair also calls attention to a statement, repeated more than once in the text, that the author lost his notes upon escaping from Germany and that, though he made efforts to recover them, he did not succeed.

Yet Krueger details, in dialogue form, long conversations, which he had with his patient, some of them covering several pages. These dialogues must be fictitious except for the general trend; and, as the interviews were frequently repeated over a long period of time, it is not likely that the author could remember in which interview certain facts were brought out. This may not be important but it has the effect upon the reader of presenting something "phony;" and one wonders how much actually is "phony" and how much can be depended upon as being accurate. Dr. Krueger professes

to have studied psychoanalysis under Freud. Upon arriving in America, a stranger, he does not appear to have gotten in touch with the organized groups of psychoanalysts and seems to be unknown among them.

If one wishes to read a sensational book about an evil character, he will find satisfaction in the perusal of this volume. The author seems to be well acquainted with names that are prominent in Nazi circles as we see them referred to in the newspapers; and he narrates much that might resemble the latrine gossip that was probably circulated in Germany in the early years of Hitler's power.

Recent Progress in Psychiatry. The Journal of Mental Science. (Published by Authority of the Royal Medico-Psychological Association.) Edited by G. W. T. H. Fleming, with the aid of a corps of psychiatrists. Special volume; cloth bound. 509 pages. J. & A. Churchill, Ltd. London. January, 1944. Price 30 shillings.

In an introduction by Dr. Fleming, the editor states: "It was felt that, having regard to the stagnation which is so apt to happen to everyone in wartime, the time was ripe to gather together information on recent progress in psychiatry and its ancillary subjects." This substantial volume, made up of 27 contributions by men well known in the psychiatric field, is intended to present the progress of psychiatry during the war period. The articles cover a wide range from anatomy of the nervous system, neuropathology, physiological psychology, through the psychoneuroses and psychoses, to child psychiatry, delinquency and crime, endocrinology in clinical psychiatry and insulin therapy, prefrontal leucotomy, and finally an excellent paper on the legal aspects of psychiatry.

The editor deprecates a tendency to train medical men hastily in clinics and mental hospitals who afterwards call themselves psychiatrists with perhaps no more than six months actual clinical experience. He believes that 10 years of active clinical experience with disorders of the nervous system and of the mind should be a prerequisite to recognition of a physician as a psychiatrist. He says, "The training of the psychiatrist cannot be adequate in a period of less than 10 years from qualification. It is a very difficult and complicated subject and requires years of constant experience and study, including long-section study of patients. The 'born' psychiatrist is a *rara avis*. The development of out-patient clinics combined with, in the general hospitals, beds under the control of a competent psychiatrist, is essential to progress. These clinics ought as far as possible to be developed in connection with the universities."

Some of the papers here printed of special interest at this time deal with physiological psychology: "Electro-encephalography," an article of 20

pages; "Vitamin Deficiency and the Psychoses;" a new presentation of "The Psychoneuroses;" "Arteriosclerotic, Senile and Presenile Psychoses," which is a subject much discussed in the New York State Department of Mental Hygiene at the present time; "Endocrinology in Clinical Psychiatry," an article of 25 pages; and "Insulin Therapy," an article of more than 30 pages. These are mentioned as being topics which are now much talked of in psychiatric circles. There are other articles, too, which are worthy of mention did space permit.

The more than 500 pages of this book contain much of interest to the psychiatrist, and the volume will repay purchase and study.

The Nature and Treatment of Mental Disorders. By DOM THOMAS VERNER MOORE, O. S. B., Ph.D., M. D. Foreword by Edward A. Strecker, M. D. 312 pages. Cloth. Grune and Stratton. New York. 1943. Price \$4.00.

Dr. Moore is well known in psychiatric and psychoanalytic circles in America. His contributions to the two divisions of that field have been outstanding, and this book is both another example and one that deserves critical consideration.

The fact that Dr. Moore is an ordained priest in the Catholic church attaches a certain value to his opinions and gives an opportunity for him to render a real contribution in overcoming intolerance and broadening the field of mental hygiene in religious circles. To his mind, religion and science appear to have no insuperable divergencies. He follows the Freudian methods and accepts the Freudian theories and conclusions, but only up to a certain point. As might be expected in such a setup, he dissents from the significance of and perhaps even the existence of the Oedipus complex. In this respect, he is not far different from Jung, Adler and other leaders who, however, are *personae non gratae* with the strictly Freudian school. This circumstance, however, need not be considered as detracting in any degree from the value of the author's contributions to psychiatry.

Dr. Moore is less concerned with fine-spun theories and more occupied with practical aspects. He quotes with apparent approval the remarks of Florence Teagarden and Jacob H. Conn. The difficulty may be, as in the case with phobias, that relatively superficial interpretations are accepted. The author in his discussion of phobias includes in an enumeration some that the reviewer would not consider morbid, a quality which the reviewer accepts as necessary in a true phobia. Dr. Moore includes fear of "reckless driving," for instance, which would seem to imply a prudent avoidance of danger; and fear of "having no one in whom to be interested," a nega-

tive anxiety, is another example. Both of these examples were given to the author by senior college students from their own experience.

An interesting feature of Dr. Moore's book is his description of his clinical cases and how he handled them by psychotherapy. They include work with children and adults, and his results seem to have been encouraging. Some of the cases include examples of organic conditions the symptoms of which have been ameliorated by psychotherapy.

The book is recommended as a practical clinical manual.

The Expression of Personality. Experimental Depth Psychology. By WERNER WOLFF. 334 pages. Cloth. Harper and Brothers New York. 1943. Price \$3.50.

The criticisms that are most commonly heard with reference to conclusions derived from psychoanalysis are that they cannot be verified by experiment (therefore, they do not fall within the definition of science); that two persons studying the same material would arrive at varying conclusions; that the analyst influences the mind of his patient to the extent that he implants his own ideas in the patient's mind. Dr. Wolff displays a commendable desire to find a method by which the personality may be studied and the conclusions checked by experiment. His method, which is as yet only tentative, takes into consideration the contribution of Gestalt psychology and makes use of the psychoanalytic approach. The work is an attempt at the elucidation of experimental depth psychology. He makes use of various techniques. He investigates the possible similarity of bodily expressions and personality—the matching of voice and handwriting; the matching of profiles with hands; the possible significance of different personality features; the determination of dominant features in facial expression.

He investigates the value of self-recognition compared with recognition of others, the nature of self-judgments. He devises control experiments on the emotional value of unconscious self-judgments. He studies the gait and other expressive muscular movements. The author is interested in memory. He has devised tests for estimating the emotional factors in perception, in memory and in forgetting.

These notes are sufficient to give some idea of the author's method without attempting to enumerate the 16 chapters which make up the book. His method is strictly experimental. He recognizes the difficulties of organizing a system of strict experimental psychology and recognizes the present work as the beginning. He recognizes that his hypotheses as yet are tentative, and he is earnestly seeking to eliminate the personal element in both the experimenter and in the subject. His concluding paragraph which summarizes this is worthy of reproduction:

"The method of stimulus and response used in this study of forms of expression should give a basis for personality interpretation. But the approach to personality by means of reaction experiments alone seems not to be adequate for exploring inner personal tendencies. Methods of measurement and 'projective methods' which we shall demonstrate in other studies may advance research into the dynamics of the self."

Dr. Wolff is to be complimented upon his scholarly work and his industry and it is to be hoped that his promise of further contributions along this line will not be long delayed.

A Hundred Years of Medicine. By C. D. HAAGENSEN and WYNDHAM E. B. LLOYD. 444 pages. Cloth. Sheridan House. New York. 1943. Price \$3.75.

Recently there have been a number of books on the history of medicine, some of them, such as that of Zilboorg, devoting themselves to psychiatric medicine particularly. We have now a history of general medicine by two physicians. Dr. Haagensen, a surgeon and pathologist, is a member of the faculty of Columbia University College of Physicians and Surgeons, and Dr. Wyndham E. B. Lloyd is engaged in public health work in England.

After sketching the history of medicine prior to the middle of the nineteenth century, Part II is devoted to the rich period beginning with introduction of anesthesia and pathology. It is safe to say that during the latter half of the nineteenth century medical science made greater advances than during the entire previous history of the world. During that era such notable developments occurred as the modern hospital, the advent of the trained nurse which made the modern hospital possible and notable discoveries and applications in the field of bacteriology which for a long time was known as the germ theory.

More than 100 pages are devoted to the evolution of surgery made possible by the epoch-making discoveries of Louis Pasteur in France which were seized upon and adapted to surgery by Joseph Lister. Lister began his remarkable work in antiseptic surgery at a time corresponding to the termination of the American Civil War, when he was a surgeon at the Glasgow Infirmary. He used carbolic acid as an antiseptic. It was eminently successful in his hands though others who had attempted to imitate his work failed because of carelessness and lack of attention to details. The meticulous Germans used it successfully from the start. Lister received high honors in that country rather early. It is noteworthy and characteristic that the British surgeons were among the very last to give him credit for his work. Though he had received honorary degrees both from Oxford

and Cambridge in 1880 and was made a baronet in 1883, British surgeons scouted his work, and his own colleagues at the Glasgow Infirmary were accustomed to caution medical students not to go into Lister's wards or imitate his methods because he was hopelessly unorthodox.

This interesting narrative goes on to more modern times and gives an account of the discovery and use of preparations of cocaine. It is interesting to note that the authors give Sigmund Freud credit for the discovery of cocaine. Freud gives an account in his autobiography of his experiments but does not claim to have perfected them to such an extent that as much credit is due as is now accorded. Full credit is given to Crawford W. Long as the first to recognize the anesthetic properties of sulfuric ether and to have made practical application of it by performing several surgical operations under its influence before Morton, the dentist of Boston, had used it at all.

The last chapter is devoted to a history of the rise of various forms of health insurance in this and foreign countries.

The reviewer can recommend this book as well written and filled from cover to cover with interesting observations of interest and value to the physician and others who would inform themselves of the development of the medical sciences.

A Handbook of Psychiatry. By P. M. LICHTENSTEIN, M. D., and S. M. SMALL, M. D. 330 pages. Cloth. W. W. Norton and Company, Inc. New York. 1943. Price \$3.50.

Dr. Lichtenstein is a physician and a member of the bar. He is in charge of psychiatry and legal medicine for the district attorney, County of New York. Dr. Small, formerly an instructor in psychiatry at Cornell Medical College, is now psychiatrist and assistant medical director of the National Hospital for Speech Disorders. They approach the subject of psychiatry from a direction that is different from that of the usual textbook. It is based upon their own experiences and is essentially practical, dealing with mental disorders from the behavior standpoint. Frequent references are made to medicolegal cases, some of which are quoted at some length. The authors are more interested in treatment than is usual in textbooks on this subject. In fact, this might be thought of as a book on the treatment of morbid mental states, though attention is given to the underlying conditions which make treatment necessary.

The book begins with a short discussion of the function of the normal personality, beginning with the infant and going on through adolescence into adult life. It points out the importance of adequate adjustments in all of the periods of development and gives examples of failure of adjustment.

Then the important mechanisms are discussed: superstition, repression, conversion, projection, displacement, rationalization and others. A chapter is devoted to the subject of abnormal behavior, which includes personal habits such as dress, sleep and motor function. Next is a chapter on emotional disturbances, alterations in awareness and orientation, memory and intellectual function.

With this general introduction, which is covered in two chapters, the subject of mental examination is taken up—such topics as family history, intellectual resources, ability to deal with oneself—all points of great clinical value but not touched upon in the ordinary psychiatric textbook. Psychometric tests are discussed adequately. Description and significance of various degrees of mental deficiency and the types of mental deficiency complete that chapter. A valuable chapter is devoted to psychopathic personality which the authors see in a broad and comprehensive manner. Many interesting medicolegal cases are discussed in this section, which takes up pathological liars and swindlers, pathological manifestations of the sex instinct, drug addiction and alcoholism. A good description is given of the psychoneuroses of civil life and of war psychoneuroses.

Another chapter worthy of mention is entitled "Psychosomatic Illnesses." An understanding survey is made in this chapter. The descriptions are illustrated by abstracts from case records. Peptic ulcer, mucous colitis, bronchial asthma and hypertension are treated as at least resulting often from psychic causes.

The formal discussion of types of psychoses is reduced to a minimum. Organic brain disorders, including paresis, are described, but the emphasis is on treatment. The same may be said of the epilepsies.

The book can be recommended highly. It approaches the subject in a new and refreshing manner. The volume should have, and doubtless will have, a wide circulation.

A Surgeon's World. By MAX THOREK, M. D. 410 pages. Cloth. J. B. Lippincott Company. Philadelphia. 1943. Price \$3.75.

Dr. Thorek writes the history of his life and achievements in an interesting manner and in good literary style. In reading his book, one gets interesting glimpses of his personality and his philosophy of life. He has been an accomplished surgeon for about 40 years and has thought deeply upon the responsibilities and duties to the community which the medical man should render.

His modesty is an outstanding trait. The following extract will serve to throw light upon his professional attitude:

"Whereas the chefs of this world cook, the dressmakers sew, the printers print, the builders build, and the salesmen sell, a doctor merely 'practises medicines.' If he so far forgets himself as to claim that he 'cures,' he is recognized at once for the charlatan that he is.

Something profound underlies this distinction which custom and tradition have evolved. Any good medical man must carry with him all his life a deep sense of the incompleteness of his knowledge. He dare not ever claim he 'knows.' He dare not ever stop his study, his constant pursuit of an elusive forward-winged truth. At the moment when he says to himself, I have learned all I need to know, at that moment he has forfeited his right even to 'practise.' "

The quotation gives a good example of the author's style, which is agreeable and fluent.

A native of Hungary, the son of a physician and midwife, he grew up understanding that he would enter the profession of medicine. However, a series of events which he narrates made it necessary for the family to emigrate to America and upon the invitation of an uncle of the author who was able to give only a little financial assistance, they came to Chicago. This was about the beginning of the century. Conditions there were crude. Many hardships had to be faced and overcome, including the language, the social customs and general way of life.

To enter Rush Medical College, it was necessary for Thorek to work. Already he had received instruction in music and had become proficient with the violin. He got his start in Chicago playing in a gypsy band. He learned that at the University of Chicago special inducements in the way of partial or complete scholarships were offered to musicians of superior ability. He made application and was told that the only vacancy at that time was for a snare drummer. He was interviewed by Professor Hobson who said that not only must the successful applicant be a snare drummer but he must be a superior snare drummer; in fact, they wanted the best snare drummer in Chicago. Max Thorek had never had drumsticks in his hand but he boldly stated that he was a snare drummer and he received the appointment, subject to a test which would be given at the beginning of the fall term, then about three months away. An amusing account is given of his preparation for that test. Obtaining a drum from a pawn shop, he practised night and day. The neighbors complained. Finally he was haled into court for disturbing the peace. He explained the situation to the judge who discharged him with a caution; and, thereafter, his practising was done in the basement with closed doors and windows, but it went on just the same. When the test was given, he passed with flying colors.

His career through medical college, his contact with hospitals, clinics, his finally becoming a surgeon and devoting his entire time to surgery and his triumphs and disappointments are all delineated with interest and feeling. A final quotation will give a glimpse of his philosophy of life:

"Abiding satisfaction dwells with the man who can look back over four decades of medical and surgical practice and remember that no one in need, of whatever race, color or creed, has looked to him in vain for help."

We have had many autobiographies but "A Surgeon's World" is one of the most interesting and well written that this reviewer has seen. He can recommend it unreservedly as well worthy of the interest and attention not only of medical men but of others too.

Fundamentals of Psychiatry. Second Edition. By EDWARD A. STRECKER, M. D. 219 pages with index. Glossary. Cloth. J. B. Lippincott Company. Philadelphia. 1944. Price \$3.00.

This is the second edition of an excellent manual. It has been revised, brought up to date and enlarged. Its appearance is welcome evidence of increasing recognition by students, physicians and professional workers in general of the vast importance of psychiatry to the understanding of today's deranged world and disturbed people.

"Fundamentals of Psychiatry" is based on many years of lectures by Dr. Strecker as professor of psychiatry at the Undergraduate School of Medicine of the University of Pennsylvania. Because he is president of the American Psychiatric Association, is consultant in psychiatry to both army and navy, and was a division psychiatrist in World War I with service in France, his name conveys the authority which is most desirable in a work designed for the instruction of persons outside the psychiatric field.

The point of view of the book is that of psychosomatic medicine, the stressing of the mental components of physical illness and the physical malfunctioning of mental disorder. That body and mind cannot be separated in the study and treatment of psychiatric conditions is a fundamental tenet; and its stressing here seems particularly designed to appeal to the understanding of the student or general medical practitioner. The text is of classroom clarity and simplicity; there are a number of excellent diagrams; and many of the more common psychiatric conditions are summarized in convenient tabulated notes.

When the first edition of "Fundamentals of Psychiatry" appeared, its reviewer for this publication welcomed it warmly. The present reviewer would echo that former praise, as well as the opinion that Dr. Strecker's use of "not conscious mind" for Freud's "unconscious" is a step of doubtful

value. It is doubtless due—as are various omissions of reference to Freud and psychoanalysis in the discussions of theory and treatment—to the author's desire to avoid arousing unnecessary resistance among generally unformed readers. If a certain superficiality of discussion results, it is not a serious drawback in an introductory text of this nature.

The second edition of "Fundamentals of Psychiatry" shows the results of revision and improvement. Some puzzling and anachronistic references in the original lecture notes have been corrected, and valuable material has been added on the psychiatric disorders of the present war. The end-papers have been devoted to a small glossary of psychiatric terms which should save the student much reference to technical dictionaries. Dr. Strecker explains his belief that in the great war emergency "Each doctor, whether he is a medical officer or remains in civil life to give medical aid to the non-combatant population, must needs acquire a minimum of psychiatric information and skill." As a guide to the acquisition of that necessary minimum, his book is admirable.

The Structure of Morale. By J. T. MACCURDY, Sc. D., M. D. 224 pages with index. Cloth. The University Press. Cambridge. The Macmillan Company. New York. 1944. Price \$2.50.

This small book is neither pretentious, comprehensive nor profound. Dr. MacCurdy neither sets out to map psychological grand strategy for the war nor to erect a psychological structure to preserve the peace. He does not delve into the deeper layers of which personality is constructed for man and nation. What he does do is to treat briefly but with clarity and brilliance a number of subjects bearing on military, political and social organization and conduct, and connected for the most part only by the fact that all are of more or less importance for winning the war and establishing a stable peace.

In Part I, the author discusses fear and adaptation to it—both active and passive. "Emotions are conditional reactions" says the page heading (which perhaps is not an altogether accurate representation of the author's views); and Dr. MacCurdy takes up the problem of "fear of bombs as a conditioned reaction." He finds that "The Luftwaffe spent months in building up morale here [in Great Britain] by its 'token' bombing before it launched the real Blitz," while Goebbels made the additional mistake of attempting to frighten the English by threats—a mistake because threats, which might terrify other peoples, are "either a silly joke or a challenge" to the English, since in the course of history, the English since the Norman conquest have never known "permanent defeat." For another German

mistake in estimating what would strike fear into an enemy, Dr. MacCurdy notes, ". . . the fatalistic oriental is not so frightened of misery as we are. Hitler should have thought of this before he attacked the Russians, who are largely Asiatic in origin and outlook. . . . the majority of people can quickly learn to face the prospect of death. But Westerners cannot face the prospect of misery. The Russians can: they do not imagine its worst because they know it."

Part II is a discussion of morale, with analysis of national characteristics and differences. The author finds that "Japanese character is such as to fulfill the conditions for perfect morale . . ." He believes defeats will not swerve the Japanese and thinks that ultimately their armies may "commit *hara-kiri* on a grand scale by pitting mere bodies against machine guns." Failing a formal conversion to the "spirit of humanity" for reasons of self-preservation, to be followed later by a genuine change of heart, Dr. MacCurdy feels ". . . the extinction of Japan would seem inevitable, for its ethos allows only the alternatives of world dominion or suicide." He finds Chinese, Russian and British morale strong and Italian weak. The morale of the German army has been splendid, but it has been built up at the neglect of or at the cost of civilian morale, and the author predicts that "German civilian organization will disintegrate before her armies have broken either physically or spiritually."

Part III discusses social and political organization for war and peace. Its remarks on governmental versus political organization are bits of penetrating analysis of the faults of both and might well be commended in this election year to the study of nonfanatics in both major parties as revealing the faults of their own groups as well as the weaknesses of their opponents. If big business men are self-seeking, so are government employees; if departmentalism is an evil in government, the personal profit motive is an evil in business. The documentation is illuminating.

Dr. MacCurdy, born in Canada and a graduate of Johns Hopkins, was a lecturer at Cornell, a captain in the medical corps of the United States Army in World War I, a worker at the Psychiatric Institute and president of the American Psychopathological Association before going to England in 1923. A fellow of Corpus Christi College and lecturer at Cambridge University, he is now regarded as one of Great Britain's foremost authorities on psychopathology and on war psychology. The present book is made up of a series of lectures devised for the highly practical purpose of training British officers and other military personnel; and it is recommended to all students of the psychological forces which are now preparing the world stage for Axis collapse and Allied victory.

Discovering Ourselves. By EDWARD A. STRECKER, A. M., M. D., and KENNETH E. APPEL, Ph.D., M. D. Second Edition. 434 pages. Cloth. The Macmillan Company. New York. 1943. Price \$3.00.

The first edition of this book appeared in 1931 and copies have been available on the market until recently. In supplying a new edition, the publishers have rendered a useful service, the more so because the new edition contains several new chapters which give a more comprehensive presentation of the emotions of fear and anger.

The book is prepared for the general reader. It is one which a doctor would give to his patient. Technical terms are avoided when possible and defined when the use is necessary. Numerous references to books on related and similar themes give hints for more extended reading. The authors keep constantly in mind the importance of the patient's understanding that in psychoneurotic complaints the disorder is essentially mental, that the physical conditions about which the patient speaks in the consulting room are subsidiary and that it is the doctor's duty to point this out to the patient and make clear that faulty habits in the mental field can be corrected as readily as in the physical but that the former job must be done by the patient. The psychotherapist's duty is to teach the patient to meet situations without fear, anxiety or apprehension. The well-known mechanisms, such as rationalization, repression and conflict, are adequately treated.

The book will serve admirably to orient a person concerned about his mental state. After reading it, such a person would probably return to the doctor with more questions to ask and a more sensible attitude toward his symptoms than he had before. The book has no index but the table of contents is elaborated and labeled in such a way that the need for an index is not apparent.

Other Publications Received

WOMEN IN WARTIME. Pamphlet. Paper. Published by the Institute for Psychoanalysis. Chicago. 1943. Price 35 cents; 25 cents in lots of five including mailing charges.

This is an authoritative discussion of the reactions and conflicts of American women during war—women whose habits and lives have been disrupted by the conflict but who are, except for the comparatively few in the services, themselves thousands of miles from actual physical danger and from the scenes of actual battle. It is an outline of what has happened and is happening as a result of changes in the family, separation from loved ones, wartime work, rationing—with the main topics covering a multitude of specific problems.

This pamphlet is of less than 40 pages and is written with an apparent simplicity which will deceive no professional reader; the informed will find every evidence of psychoanalytic insight and psychiatric understanding in this careful presentation. The result should be both intelligible and acceptable to any literate adult. This pamphlet is calculated to be of use to the wife, mother or sweetheart whose personal life has been affected by the calling of men to the service; to the woman in war industry, in the Waves or Wacs, or in morale organization work. Personnel directors and social workers will find it valuable.

A SURVEY OF STATISTICAL STUDIES ON THE PREVALENCE AND INCIDENCE OF MENTAL DISORDER IN SAMPLE POPULATIONS By Paul Lemkau, Christopher Tietze and Marcia Cooper. 20 pages. Paper. Reprint No. 2534 from The Public Health Reports, Vol. 58, No. 53, December 31, 1943.

Three European and two American papers on the prevalence of mental disease and 15 European papers on its incidence—estimated according to the method of Professor Rüdin of the German Institute for Psychiatry—are covered by this survey. These articles have been used as source material in the past and to provide comparative matter for other statistical studies. Lemkau, Tietze and Cooper conclude that these studies are “basically incomparable” because of poor selection of sample populations, differences in methods, fundamental concepts, diagnosis, classification and other reasons. Their report should be of interest not only to statisticians but to administrators and other users of statistics.

ORIENTACAO PRATICA SOBRE A INDICACAO DOS METODOS DE CHOQUE NO TRATAMENTO DAS DOENCAS MENTAIS. By Fernando O. Bastos and Joy Arruda. Paper. *Neuronio*, V:1, 1944.

This report by two psychiatrists of the Instituto Paulista of Sao Paulo, Brazil, covers insulin, metrazol and electric therapy. The authors analyze statistically 123 insulin cases from their own service; metrazol cases are reported from their own service and the literature; and a large series of cases treated by electricity is analyzed statistically and compared with reports in the literature. Clinicians will be interested to note that—as in some other foreign reports—the authors appear both to treat a larger proportion of psychoneurotic patients and to cite better results with them than is usual in American papers on the subject.



WILLARD H. VEEDER, M. D.

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Willard H. Veeder, M. D., assistant director of Rochester State Hospital, where he had served as pathologist for more than 20 years, was appointed by Commissioner Frederick MacCurdy on May 1, 1944, as director of Craig Colony, the State Department of Mental Hygiene institution for epileptics at Sonyea. He had entered the State service at Rochester State Hospital in 1905 and, except for service as a captain in the medical corps during the first World War, remained with that hospital until his appointment to Craig Colony.

Willard H. Veeder was born at Lyons on February 17, 1879. He attended the public schools of that town and was graduated from the medical department of the University of Buffalo in 1903. He was interne in an emergency hospital and had a year's internship in the Erie County Hospital before joining the staff of Rochester State Hospital.

During his State service, Dr. Veeder studied a number of times at the Psychiatric Institute, specializing in laboratory work; and he was stationed during most of his army service at the Laboratory Division of the Surgeon General's office in Washington. He has been active in medical society circles, served several times as an officer of the Rochester Academy of Medicine, was president of the Monroe County Medical Society in 1935, and served either as delegate or alternate from Monroe County to the Medical Society of the State of New York for a period of 20 years.

Dr. Veeder's nonprofessional interests include the hobbies of music and genealogy.

NEWS AND COMMENT

AUGUST E. WITZEL, M. D., DIES AT 53

August E. Witzel, M. D., head of Newark State School since October 1, 1940, died at his home at that institution following a heart attack on May 15, 1944, at the age of 53. He had been in the State service since 1916.

Born in Rochester on June 13, 1890, Dr. Witzel was graduated from the medical school of Syracuse University in 1916 and entered the State service at Utica State Hospital, where he reached the grade of senior assistant physician. He was transferred to Brooklyn State Hospital as director of clinical psychiatry in 1925, became first assistant physician there in May, 1940, and was detailed as acting medical inspector two months later, the position in which he was serving at the time of his appointment to Newark. Dr. Witzel was active in clinic work and in teaching and was the author of a number of scientific articles. He leaves a widow, the former Helen M. Van Alstyne of Ilion, and a daughter, Patricia Ann.

DRS. GROVER AND YOUNG BECOME MEDICAL INSPECTORS

Milton M. Grover, M. D., assistant director of Hudson River State Hospital, and Claude R. Young, M. D., assistant director of Binghamton State Hospital, were named acting medical inspectors of the New York State Department of Mental Hygiene by Commissioner Frederick MacCurdy, M. D., on May 1, 1944. After graduation from Ohio Medical College in 1911, Dr. Grover entered the New York State hospital service in 1912 and has served on the staffs of Central Islip, Kings Park, Harlem Valley and Hudson River. Dr. Young, a graduate of Queens University Medical School in 1922, joined the State service at Binghamton State Hospital and later served there as senior assistant physician and first assistant physician.

EDWARD HUNTINGTON WILLIAMS, M. D., IS DEAD

Edward Huntington Williams, M. D., nationally known in the field of forensic psychiatry and as a writer on scientific subjects, died at his home in Santa Monica, Calif., on June 24, 1944, following a heart attack. He was 75 years old.

Dr. Williams was widely known to the general public as a psychiatric expert in criminal court cases, including the Fortescue case in Hawaii, the Hickman case in California, and the Judd case in Arizona. He served on

the Los Angeles police commission as a psychiatric adviser on sex crimes; and his books included "The Doctor in Court," "The Insanity Plea," "Crime, Mental Abnormalities and the Law" and "The Walled City—A Story of the Criminal Insane." A graduate in medicine of the State University of Iowa, he had served as a young physician on the staffs of Matteawan and Manhattan State Hospitals.

With his brother, the late Henry Smith Williams, M. D., also a writer, Edward Huntington Williams was author of "A History of Science" in five volumes, "Every-Day Science" in 11, and "The Wonders of Science in Modern Life" in 10. He was associate editor of the tenth edition of the Encyclopaedia Britannica and of the United Editors' Encyclopedia.

DR. TALLMAN HEADS OHIO MENTAL HOSPITALS

Frank Ford Tallman, M. D., who left the post of director of clinical psychiatry and director of the Children's Group, Rockland State Hospital, to become mental hygiene director for the state of Michigan on January 1, 1942, has been appointed Commissioner of Mental Diseases in the Ohio State Department of Public Welfare. He will supervise 15 hospitals and institutions for the mentally ill, mentally defective and epileptic, with a population of about 27,000 patients, and will be responsible in addition for a state-wide mental hygiene plan and for a receiving hospital program.

Dr. Tallman served in the New York State Department of Mental Hygiene for 12 years before his Michigan appointment. He had been clinical director and Children's Group director at Rockland for four years before leaving this State. At the time he took the Michigan post, he was on leave of absence from Rockland to act as director of the parole and family care study of the New York Temporary Commission on State Hospital Problems, which was then conducting a survey under the chairmanship of Homer Folks. He has contributed to THE PSYCHIATRIC QUARTERLY and other scientific publications, chiefly on the subjects of child guidance and child psychiatry.

DR. CHARLES H. BRUSH OF KINGS PARK DIES

Charles H. Brush, M. D., assistant director of Kings Park State Hospital and formerly director of clinical psychiatry there, died at his home at the hospital on May 29 after a heart attack. Dr. Brush received his medical education at University and Bellevue Medical College and at Fordham Medical School, from which he received his medical degree in 1913. He joined the Kings Park staff in 1917. During World War I, he served as a lieutenant in the army medical corps.

DR. POLLOCK ADDRESSES JOINT ASSOCIATION MEETING

Horatio M. Pollock, Ph.D., retired director of mental hygiene statistics for the New York State Department of Mental Hygiene and former president of the American Association on Mental Deficiency, addressed a joint meeting of that association and the American Psychiatric Association in Philadelphia in May on the results of a statistical study of mental disease among mental defectives. Dr. Pollock found the incidence of mental disorder higher among defectives than in the general population and that it decreased with increasing intelligence. Chairman Franklin B. Kirkbride of the Letchworth Village Board of Visitors was another speaker at the 68th annual meeting of the association on mental deficiency, with his subject "One of the Most Unforgettable Characters I Have Ever Known," Dr. Charles S. Little, planner and for many years head of Letchworth Village. Elaine F. Kinder, Ph.D., presented a study of problem children at Letchworth and at Rockland State Hospital.

Problems of the mental defective in wartime work and the armed services occupied much of the attention of the association's Philadelphia meeting. Dr. E. Arthur Whitney of Elwyn, Penn., was chosen as the new president, and Miss Mabel Matthews of Mansfield Depot and Southbury, Conn., was named president-elect.

WAR TOPICS DOMINATE CENTENARY MEETING OF ASSOCIATION

Problems of military psychiatry and observance of the association's 100th anniversary divided attention at the centennial meeting of the American Psychiatric Association in Philadelphia during the week of May 15. The New York State Department of Mental Hygiene was represented at the meeting by Commissioner MacCurdy, Deputy Commissioner Bigelow, Assistant Commissioner Pense, 13 directors of State Department institutions and others widely known in the State service.

Commissioner MacCurdy read a paper on "Administrative Psychiatry," and Deputy Commissioner Bigelow and Director Harry J. Worthing of Pilgrim State Hospital presented a paper on "Intramural Writs of Habeas Corpus." Chairman Franklin B. Kirkbride of the Letchworth Village Board of Visitors, son of Dr. Thomas S. Kirkbride, who was the first secretary and the second president of the association, was among those who gave addresses of welcome.

Willard H. Veeder, M. D., director of Craig Colony, was elected secretary of the association's section on convulsive disorders. Among the papers

presented, was one by Alexander Gralnick, M. D., of Central Islip State Hospital, on a survey of insulin therapy at that institution over seven years, with outcomes and indications for prognosis. New Yorkers in attendance besides those named included Director of Social Work Hester B. Cruteher and Secretary Paul O. Komora of the Mental Hygiene Department.

The association chose Karl M. Bowman, M. D., of San Francisco as its new president and Samuel W. Hamilton, M. D., of Washington, D. C., as president-elect.

SOCIAL SERVICE APPOINTMENTS MADE

Appointments of Miss Dana L. Ingle as assistant director of psychiatric social work for the New York State Department of Mental Hygiene and of Mrs. Mabel Kirkpatrick as supervising social worker of the new After-Care Clinic for New York City were announced by Commissioner Frederick MacCurdy, M. D., effective June 1, 1944. Miss Ingle will be stationed at Department headquarters in Albany. The clinic to be headed by Mrs. Kirkpatrick, former senior social worker at Utica State Hospital, will serve convalescent patients from the State hospitals of the New York City metropolitan district and from Letchworth Village and Wassau State School.

An important business administration appointment in the Department was made by the Commissioner on May 1, when Ralph W. Westlake of Newburgh was named farm consultant to promote the Department's farm program.

MENTAL HYGIENE DEPARTMENT CONFERENCES CONDUCTED

The Spring Quarterly Conference of the New York State Department of Mental Hygiene was conducted on April 18 and 19 in Albany, with administrative and scientific matters discussed.

Two regular Bi-Monthly Conferences—a new series of meetings inaugurated by Commissioner Frederick MacCurdy, M. D.—were held, the first at the Psychiatric Institute on February 16. This session was featured by meetings of clinical directors and head social workers, followed by a joint meeting of both; and the Commissioner addressed all three gatherings. The second was at Central Islip, Pilgrim and Kings Park State Hospitals on June 27 and 28, with the Commissioner presiding. There were both administrative and scientific meetings, with personnel and reclassification problems important subjects of discussion in the former sessions, and with both guest speakers and Department research workers addressing the latter.

The Department's annual interhospital conferences, a series of scientific meetings interrupted by wartime travel and working conditions, were held again this year. Formerly conducted instead of a Spring Quarterly Conference, they were called this year in addition to the Spring Quarterly Conference and the June Bi-Monthly Conference. The up-State meetings were on April 25 and 26 at the Syracuse Psychopathic Hospital and the down-State sessions at the Psychiatric Institute on May 2 and 3.

A departure from precedent in the 1944 interhospital conferences was the presentation by authorities outside the State hospital system of reviews and reports in specialized scientific fields. Lieut.-Col. Duncan Whitehead, on military leave of absence from Utica State Hospital, and from his duties as associate editor of *THE PSYCHIATRIC QUARTERLY*, discussed new developments in military psychiatry, as did Col. William C. Porter. Other guest speakers included Dean Herman G. Weiskotten of the College of Medicine, Syracuse University, Dr. Robert E. Plunkett of the New York State Department of Health and Dr. Albert V. Hardy of the United States Public Health Service. There were the usual papers by research workers and staff members of the civil State hospital system.

HEALTH EDUCATION FELLOWSHIPS

The National Foundation for Infantile Paralysis announces the setting aside of \$50,000 to establish fellowships in health education in cooperation with the United States Public Health Service. Men and women with bachelor of science degrees or their equivalents are eligible for the fellowships which will provide for tuition and a stipend for maintenance during a year of study and field work, leading to a master of science degree in public health. The association has also announced a total of \$1,128,770 in new grants for poliomyelitis research at leading universities, laboratories and other scientific and educational organizations.

BUTLER HOSPITAL OBSERVES CENTENNIAL

Butler Hospital of Providence, R. I., observed the centenary of its foundation on May 10, 1944, at exercises addressed by President Edward A. Strecker, M. D., of the American Psychiatric Association; Alan Gregg, M. D., director of the division of medical sciences of the Rockefeller Foundation; Gregory Zilboorg, M. D.; Karl A. Menninger, M. D.; and Miss Elizabeth S. Bixler of the Yale University School of Nursing. Butler Hospital was the first hospital of any sort to be established in Rhode Island.

SURGEONS TO MEET IN OCTOBER

The Ninth Annual Assembly of the United States Chapter of the International College of Surgeons will be conducted at the Benjamin Franklin Hotel, Philadelphia, October 3, 4 and 5, with a program devoted to war, rehabilitation and civilian surgery.

PSYCHIATRIC REHABILITATION SERVICE ESTABLISHED

The establishment of a psychiatric rehabilitation service to work with government agencies among mentally disabled war veterans has been announced by The National Committee for Mental Hygiene. Thomas A. C. Rennie, M. D., is director. A "Bulletin on Psychiatric Rehabilitation," of which two numbers have already appeared, is being issued; the national committee has published a "Bibliography on Psychiatric and Mental Hygiene Aspects of Civilian Rehabilitation" and is responsible for the distribution to interested local agencies of some 1,600 copies of a "Memorandum of Material to Be Used by Committees as Part of an Informational Guide for Returning Service Men."

The national committee's rehabilitation service plans to work largely with the Vocational Rehabilitation Bureau of the Federal Security Agency and the 48 State Vocational Rehabilitation Bureaus, the official agencies charged with aid to the 80 per cent of men discharged with psychiatric disabilities whose illnesses are not service-connected. It also purposes to work with local communities in aiding the million and a quarter men rejected in the draft for mental and emotional reasons and for whom the Federal government has made no provision.